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Dated: February 7, 2008 Signature: _____ (Sarah J. Jeromin)

PTO FEB 07 2008 PATENT & TRADEMARK OFFICE

Docket No.: 549222000101
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
John O. RYAN

Application No.: 08/977,846 Confirmation No.: 3572

Filed: November 25, 1997 Art Unit: 3628

For: METHOD AND SYSTEM FOR INFORMATION DISSEMINATION WITH USER MENU INTERFACE (AS AMENDED) Examiner: I. Borissov

THIRD DECLARATION UNDER RULE 132

I, Charles H. Jablonski, declare as follows:

Qualifications

1. I make each of the statements in this declaration based on my personal knowledge, except where I indicate that the statement is based on information and belief. I would, if necessary, testify to the truth of each of those statements.

2. Command Audio Corporation has retained me as a consultant in relation to above cited U.S. Patent Application No. 08/997,846. (the "Ryan Application".) I previously consulted with Command Audio in *Command Audio Corporation v. Sony Electronics, Inc.*, Case No. 02-cv-0599 (MJJ) in the United States District Court for the Northern District of California (the "Sony Litigation"). In the Sony Litigation, I provided my independent opinions about the infringement and validity of Command Audio's U.S. Patent Nos. 5,590,195 and 6,330,334. (Those patents share the same disclosure as the present application, and like the present application, are continuations-in-part of U.S. Application No. 08/031,763 filed on March 15, 1993.) I have also provided my independent opinions regarding references cited in the prior Office Action having a mailing date of

December 13, 2005 in my First Declaration Under Rule 132 of Charles H. Jablonski, filed March 8, 2006, of record (regarding De Bey WO99/03112 and Lang U.S. 5,057,932), and in my Second Declaration Under Rule 132 of Charles H. Jablonski, filed March 8, 2006, of record (regarding Yoshio, Japanese Patent Application No. 04-310631). For my current consulting work, I am being compensated at my ordinary consulting rate of $350 per hour.

3. Attached as Exhibit A to this declaration is a copy of my *curriculum vitae*. I studied electrical engineering at Rensselaer Polytechnic Institute and Union College. I have worked in the broadcasting industry for 24 years. From 1983 to 1993, I worked for National Broadcasting Company ("NBC"), where I became Chief Engineer for the Network, responsible for capital and strategic planning as well as various fast track technology projects. From 1993 to 1999, I was Vice President of Broadcast and Network Engineering at NBC, responsible for the Network's commercial operations. My responsibilities included design, procurement and implementation of end-to-end data broadcast network for affiliate sites and implementation of the Network Operating Center. My responsibilities also involved reviewing technology and intellectual property of interest to the Network. In 1999, I joined Geocast Network Systems, Inc., a startup focused on building a new network that used digital broadcast infrastructure to deliver personalized rich-media information and programming and data to the PC desktop. In 2000, I became Geocast's Chief Operating Officer. Since 2001, I have been interim President and Chief Executive Officer of Myrio Corporation, a startup focused on an open standards architecture solution for IPTV (Internet protocol television) allowing interoperability of core components such as set-top boxes. Since 1988, I have been the Chairman of the National Academy of Television Arts & Sciences Engineering Achievement Awards ("NATAS Engineering Awards") Committee.

4. Exhibit B is a list of materials referenced below that I reviewed in preparing this declaration.

State of the Art in 1993

5. As NBC's Vice President of Broadcast and Network Engineering in 1993 I am personally and fully familiar with the state of "art" to which the Ryan Application relates, i.e., equipment and systems for broadcasted media consumption.

6. On March 15, 1993 when Ryan's first application was filed, consumer digital broadcast transmission was largely experimental. (For perspective, the first deployment of a digital broadcast system for consumer use was in June 1994 by DirecTV, for which the 1994-95 NATAS Engineering Award was awarded.) In 1993 broadcasted media was delivered to consumers by "over the air broadcast" to televisions and radio receivers, by analog cable systems, and by the sale of fixed media to be played back on home players such as Video Home System (VHS) and audio Compact Disc Read-Only Memory (CD-ROM) players.

7. The first time (of which I am aware) that any practical digital video and audio consumer recording technology was demonstrated was a private demonstration by Panasonic to NBC in November 1994 in Osaka, Japan. In 1993, VHS, Betamax and audio tape recorders were used by consumers to capture and play back broadcasted media. Magneto-optical (MO) drives had not been widely used in the broadcast or audio recording industry due to the slow transfer rate of data to the disk relative to the data acquisition rate from the source. (In about 1992, Sony introduced the MiniDisc for audio which had a direct overwrite feature to help address this problem. However, the MiniDisc was originally based exclusively on ATRAC audio compression format and was not a data disk. The data format for the MiniDisc was not introduced until about 1994.) Re-writable Compact Disc (CD-RW) was not introduced until 1997. In addition, the first suite of Moving Picture Experts Group (MPEG) standards (ISO/IEC 11172-3) was not published until 1993 and the second suite of MPEG standards, MPEG-2 (ISO/IEC 13818-3), was not published until 1995.

8. In 1993, industry professionals had available limited digital video recorders such as hard disc and MO drives used largely for secondary storage and image manipulation. It was not

until 1994 that NBC realistically considered large scale digital video storage for its network operations.

The Ryan Architecture

9. The Ryan Application and his related patents solved the problem of the inability of individuals in 1993 to consume whatever broadcasted audio they wanted, whenever they wanted. Ryan's solution allows individuals to enjoy the immediacy of broadcasted media while providing them with choice and control over content and consumption.

10. An embodiment described in the Ryan Application and the Ryan patents (U.S. Patent Nos. 5,406,626; 5,524,051; 5,590,195; 5,751,806 and 6,330,334) enables commuters to listen to whatever programming they wanted, including continuous updates, whenever they wanted. To be clear, this is not merely a time shifting device like a VHS or audio cassette recorder on which broadcasted media can only be searched and replayed in linear (sequential) fashion. It allows broadcasted audio to be continuously updated and randomly recalled and accessed in linear and non-linear (random access) fashions using a set of menus describing the database of locally stored broadcasted media. As I have stated, this combines the usefulness of time shifting with the ability to receive, organize and efficiently consume broadcasted media including continuous updates, such as current news. As Ryan states at page 7, lines 24-25 and page 8, lines 3-7 of the Ryan Application, "For full effectiveness the information dissemination device needs to be on 24 hours a day. ... The FM subcarrier tuner 12, microcontroller 20, conditional access circuitry 16 and random access memory 28 typically remain powered at all times (by battery power if necessary) to receive a continuous update of the broadcast database, and thereby to store current news in RAM 28."

11. The claims pending in the Ryan Application define aspects of the above-described solution that Ryan invented that enables his novel mode of media consumption which I will refer to as the "Ryan Architecture". I set forth pending Claim I (previously presented) as an example:

> 1. A receiver adapted to receive data contained in a transmitted broadcast signal comprising:

a tuner for receiving a broadcast signal;

a memory coupled to the tuner for storing data in the received broadcast signal in a database;

a user interface for providing a set of menus describing the database, and for accepting selections from the set of menus;

a controller coupled to the memory and the user interface for selecting data from the database in response to the accepted selections and providing the selected data in a digital form; and

a speech producing sub-system coupled to the controller and the memory for converting the selected data from digital form to an analog signal.

12. Variations of the Ryan Architecture are also claimed in his other patents, including those at issue in the Sony Litigation. I set forth Claim 44 of U.S. Patent No. 6,330,334 (which was litigated in that action) as an example below:

44. A receiver comprising:

a television tuner;

a controller coupled to the television tuner and which provides audio from a signal received at the television tuner, wherein the audio is carried in an audio or video portion of television signals received at the tuner;

a memory coupled to the controller and which stores the audio;

a user interface coupled to the controller and which provides a menu; and

an audio output device coupled to the controller and which outputs the stored audio in response to a selection from the menu, wherein the stored audio has a designation associated with the menu.

13. As so recited, the Ryan Architecture is a complete integrated system that allows the continuous reception, storage, selection and retrieval of broadcasted audio in linear or non-linear manners. This functionality is enabled by the Ryan Architecture: a tuner, memory, controller and play back sub-system all coupled together with a menu-driven user interface describing the stored data and allowing selections of specific data for consumption.

Commercial Implementations of the Ryan Architecture

14. In late 1998 (more than five years after John Ryan filed his first patent application) the first public trials of a personalized digital video recorder (PVR) and service began. The TiVo PVR and service were exhibited at the Consumer Electronics Show (CES) in January 1999 and TiVo (along with ReplayTV) was awarded the 2000-2001 NATAS Engineering Award for that work. Command Audio also introduced its audio-on-demand device ("RCA CA-1000") and associated service at the 1999 CES and earned the Innovation Design and Engineering Award for new products.

15. Attached to this declaration as Exhibit C is a copy of the "User's Manual" for the RCA CA-1000. I obtained this document and a RCA CA-1000 device from Command Audio, Inc. I disassembled and examined the RCA CA-1000 device. I have also reviewed the RCA CA-1000 User Manual.

16. The RCA CA-1000 includes a "tuner for receiving a broadcast signal". By personal inspection, I was able to confirm that the RCA CA-1000 includes an FM antenna (*see also, e.g.*, Exhibit C, page 12) and tuner that are used to receive programs over FM broadcast radio transmissions. The RCA CA-1000 also includes "a memory coupled to the tuner for storing data in the received broadcast signal in a database". As described on page 28 of Exhibit C, the RCA CA-1000 includes memory sufficient to store up to 8 hours of audio programs. The RCA CA-1000

further includes "a user interface for providing a set of menus describing the database, and for accepting selections from the set of menus". Buttons on the RCA CA-1000 device are used to navigate a set of menus and select programs for playback (*see, e.g., id.* at pages 12, 14 and 15). The RCA CA-1000 includes "a controller coupled to the memory and the user interface for selecting data from the database in response to the accepted selections and providing the selected data in a digital form". In particular, by personal inspection, I was able to confirm that the RCA CA-1000 includes a Motorola 68307 processor. Finally, the RCA CA-1000 includes "a speech producing sub-system coupled to the controller and the memory for converting the selected data from digital form to an analog signal". The programs selected from the database in memory are converted to an analog signal and played back on a speaker.

17. The RCA CA-1000 includes all the elements of pending Claim 1.

18. Another example of an audio-on-demand implementation of the Ryan Architecture is the XM Satellite Radio Holdings, Inc. "Inno" (also known as the XM2go) satellite receiver/recorder manufactured and sold by Pioneer Electronics (USC), Inc. ("Pioneer"). I disassembled and examined an Inno device. I also obtained and reviewed internal photographs of the Inno on file with the FCC ("the FCC Photographs") (https://fjallfoss.fcc.gov/prod/oet/forms/blobs/retrieve.cgi?attachment_id=715697&native_or_pdf=pdf). The FCC Photographs show the same features I observed in the Inno that I dissembled and examined. I also obtained and reviewed a copy of the Inno User Guide (www.pioneerelectronics.com/vgn/images/portal/cit_11221/310280444enginno_usergd_5.17.06[1].pdf). I have attached the FCC Photographs and the Inno User Guide as to this declaration as Exhibits D and E.

19. Exhibit D1 is the fourth page (of five) from the FCC Photographs entitled "Receiver Board – Front." It shows the Inno's "tuner for receiving a broadcast signal." In that exhibit I have labeled the Inno's antenna and tuner for receiving broadcast signals.

20. Exhibit D2 is the second page (of five) from the FCC Photographs entitled "Controller Board – Front." I have labeled "Memory" the Inno's "memory coupled to the timer for storing data in the received broadcast signal in a database".

21. Page 37-39 of the Inno User Guide attached as Exhibit E, describes the Inno's "user interface for providing a set of menus describing the database, and for accepting selections from the set of menus". As shown on page 38 of the Inno User Guide, the user interface displays options for selecting recorded music, including "All Songs", "Artists" and "Categories". As shown on page 38 of the Inno User Guide, the user interface displays options for selecting recorded music, including "All Songs", "Artists" and "Categories" and up/down arrow buttons are used to make selections. When a selection is made, additional options are displayed. For example, as described on pages 38-39 of the Inno User Guide, a list of artists may be displayed. Once an artist is selected, the user interface will display a list of songs by that artist that have been recorded and a song from that list can be selected for playback. I have labeled the Inno's "Display" and "Control Pad" on Exhibit D2.

22. I have also labeled "Controller" on Exhibit D2 the Inno's "controller coupled to the memory and the user interface for selecting data from the database in response to the accepted selections and providing the selected data in a digital form". I have labeled as "Audio D to A" on Exhibit D1 and as "Headphone Jack" on Exhibit D1 the Inno's "a speech producing sub-system coupled to the controller and the memory for converting the selected data from digital form to an analog signal".

23. The Pioneer Inno includes all the elements of pending Claim 1.

24. According to Command Audio's web site, XM is a licensee of Command Audio (www.commandaudio.com/licensees.php#XM%20Satellite%20Radio).

25. Typical PVRs also use the Ryan Architecture. As I have stated, the Ryan Architecture enables continuous reception, storage, selection and retrieval of broadcasted audio in linear or non-linear manners using a set of menus describing the stored database. The database and set of menus can be used in embodiments to enable organization and efficient access to a large

amount of broadcasted media for playback. Coupling of both the tuner and speech producing sub-system to the memory can be used to enable continuous updates to be received. As a result, the benefits of the immediacy provided by broadcasted media can be preserved while also providing the benefits of organization, efficiency and control over playback. This architecture is fundamental for enabling these characteristic features and functionality of typical PVRs since they were introduced in 1999, which continuously receive, organize and provide efficient access to a large number of broadcasted programs under user control. Below I describe representative examples of PVRs implementing the Ryan Architecture that have been widely used by consumers in the broadcast cable and satellite television markets.

26. Attached to this declaration is a copy of the Sony Electronics, Inc. ("Sony") SVR-3000 PVR Service Manual and Installation Guide (Exhibit F1) that I purchased from a commercial website that offers various technical information and service manuals (www.nodevice.com). Attached to this declaration as Exhibit F2 is a copy of the Sony SVR-3000 PVR Operation Manual ("TiVo Viewer's Guide") that I purchased from a commercial website that offers various technical information and service manuals (www.user-manuals-com.) I recognize Exhibits F1-F2 as the same Sony SVR-3000 Service Manual and Installation Guide and TiVo Viewer's Guide that I had previously reviewed during the Sony Litigation. During my work on the Sony Litigation, I also reviewed a substantial amount of additional information relating to the components and operation of the SVR-3000 and related TiVo service. Some of that information is subject to a Protective Order in the Sony Litigation. I base my opinions in this declaration regarding the SVR-3000 device solely on publicly available information.

27. Attached to this declaration as Exhibits G1-G5 are copies of the "Block Diagram" from Section 2-3 of the SVR-3000 PVR Service Manual in Exhibit F1 showing the architecture of the SVR-3000. I have highlighted those copies of the Block Diagram in Exhibits G1-G5 to illustrate where in the SVR-3000 are found the various elements of pending claim 1.

28. In Exhibit G1, I have shown the SVR-3000's "tuner for receiving a broadcast signal" highlighted in yellow. The SVR-3000's tuner is labeled "Tuner/IF".

29. In Exhibit G2, I have shown the SVR-3000's "memory coupled to the tuner for storing data in the received broadcast signal in a database" highlighted in yellow. The Tuner/IF provides to the memory ("HDD 1") data from the received broadcast signal. This data travels through "MPX Audio AD/DA" which is connected to the "Media SW ASIC". The Media SW ASIC provides the audio data to the database in HDD 1 through the "IDE I/F" interface.

30. In Exhibit G3, I have shown the SVR-3000's "user interface for providing a set of menus describing the database, and for accepting selections from the set of menus" highlighted in yellow. The user commands are provided to the SVR-3000 either through "Front Panel" push buttons or an infrared ("IR") control. (Although only the "IR OUT" is shown in the Block Diagram, the IR receive input is shown on page 29 of the SVR-3000 PVR Service Manual in Exhibit F1 as "IR-RECV-IN" at Pin 6 of the 1R controller.) These commands are processed by a combination of the Media SW ASIC via the PCI Bus and "MPEG2 Decoder & Bus Bridge" and the MIPS CPU via the CPU Bus which provide appropriate commands and actions to the SVR-3000. Based on the system state, stored information in the database and relevant choices, the MIPS CPU along with the MPEG2 Decoder & Bus Bridge provide a visual display through the "Video Driver" and video output ("Line 1/2/S Video Out") to the user. An example of the visual display showing the menus which describe the database is shown at pages 18 and 31-33 of the TiVo Viewer's Guide (Exhibit F2). As shown on pages 18 and 31-33, the "Now Playing" user interface displays programs saved on the recorder. When a program is selected, additional information describing the program is displayed along with options for selecting the program, including options to "Play" (or "Resume Playing") or to "Save to VCR". Page 11 of the SVR-3000 Installation Guide in Exhibit F1 provides an example of how a user with the IR remote control would access material recorded in the database. As shown on page 11, by operating the "LIST button" and "Navigation arrows and SELECT buttons" a user "opens the 'Now Playing List' of recorded programs" and "moves the highlighted area or cursor left, right, up, or down, and chooses (selects) the currently highlighted item in a menu."

31. In Exhibit G4, I have shown the SVR-3000's "controller coupled to the memory and the user interface for selecting data from the database in response to the accepted selections and

providing the selected data in a digital form" highlighted in yellow. The SVR-3000's controller is coupled to the user interface as described in the previous paragraph. The MIPS CPU is coupled to the HDD 1 via the CPU Bus, the MPEG2 Decoder & Bus Bridge, the PCI Bus, Media SW ASIC and IDE I/F interface. Selected digital data are provided from HDD 1 via the IDE I/F interface and Media SW ASIC.

32. In Exhibit G5, I have shown the SVR-3000's "speech producing sub-system coupled to the controller and the memory for converting the selected data from digital form to an analog signal" highlighted in yellow. The selected digital data provided by the Media SW ASIC are converted from digital to analog signal by MPX Audio AD/DA, which in turn is coupled to MIPS CPU and the Media SW ASIC.

33. The Sony SVR-3000 includes all the element of pending Claim 1. In addition, both Sony's SVR-2000 and SVR-3000 PVRs were held to infringe Claim 44 of U.S. Patent No. 6,330,334 in the Sony Litigation on Command Audio's motion for summary judgment. I have attached a copy of that judgment as Exhibit H to this declaration. Claim 44 of the '344 patent is set out above in Paragraph 12. It is not only my opinion, but it is the judgment of the United States District Court for the Northern District of California, that Sony's SVR-3000 PVR includes a tuner, memory, controller and play back sub-system all coupled together with a menu-driven user interface describing the stored data and allowing selections of specific data for consumption.

34. In December 2005, Sony settled the Sony litigation patent infringement action brought by Command Audio. According to Command Audio's December 15, 2006 press release: "Under terms of a confidential license agreement, Sony has made a financial settlement and has taken a royalty-bearing license to use Command Audio's patented technology in such products as personal video recorders (PVRs) and personal computers with PVR functionality. The worldwide agreement runs for the life of Command Audio's core PVR patents." (http://www.commandaudio.com/_release.php?which=7)

35. The Sony SVR-3000 PVR was based on hardware reference design and software provided by the TiVo, Inc. (See pages 5-6 of TiVo's Form 10K filed with the SEC on April 15, 2004 for the period ending January 31, 2004 attached as Exhibit I.) According to page 19 of TiVo's Form 10Q filed with the SEC on December 9, 2005 for the period ending October 31, 2005 attached as Exhibit J, TiVo had an indemnification obligation to Sony for the Sony Litigation, and since February 2002, had incurred $5.8 million in legal expenses.

36. TiVo had also TiVo-enabled PVRs manufactured by and licensed its hardware designs and software to a number of other manufacturers of PVRs including Toshiba, Pioneer, Philips, Thomson Multimedia and Hughes. (See pages 5-6 of TiVo's Form 10K filed with the SEC on April 15, 2004 for the period ending January 31, 2004 attached as Exhibit I.) Like the Sony PVRs, these TiVo enabled PVRs would also need to implement the Ryan Architecture in order to deliver TiVo's service to a consumer.

37. Scientific Atlanta ("SA"), now a subsidiary of Cisco Systems, Inc., also manufactures a line of PVR products including the Explorer 8000, 8000HD, 8240 and 8300. (www.scientificatlanta.com/Products/consumers/new_cableboxes.html). Attached to this declaration as Exhibit K1 is a copy of the data sheet for SA's Explorer 8300. Pages 2 and 3 of the SA 8300 Data Sheet outline the Explorer 8300 specifications. Attached as Exhibits K2-K4 are similar data sheets for the Explorer 8000, 8000HD and the 8240. I obtained all these specifications ("SA DVR Specifications") from SA's website at http://www.cisco.com/en/US/products/ps8613/products_data_sheets_list.html. Also attached to this declaration as Exhibit L is SA's Explorer Digital Video Recorder User's Guide ("SA DVR User's Guide"). (www.scientificatlanta.com/products/consumers/userguidepdfs/4003870.pdf). The SA DVR User's Guide describes the functionality and operation of SA's Explorer 8000, 8000HD, 8240 and 8300 (*see* page 48 of Exhibit L).

38. Exhibits K1-K4 each describes the Explorer 8000, 8000HD, 8240 and 8300's "tuner for receiving a broadcast signal". The descriptions for the "Dual Analog and Digital Service Tuners" (Explorer 8000, 8000HD and 8300 Specifications) and "Dual Digital Service Tuners"

(Explorer 8240 Specification) features are found on page 2 of each of the respective SA DVR Specifications.

39. Exhibits K1-K4 also each describes the Explorer 8000, 8000HD, 8240 and 8300's "a memory coupled to the tuner for storing data in the received broadcast signal in a database". The descriptions for the "80 GB Hard Drive" are found on page 2 of each of the respective SA DVR Specifications.

40. Page 18 of the SA User Guide attached as Exhibit L, describes the Explorer 8300's: 8000/8000HD/8420 "user interface for providing a set of menus describing the database, and for accepting selections from the set of menus". As shown on page 18, the "Recorded List" displays programs that have been recorded. When a program is selected, additional information describing the program is displayed along with options for selecting the program, including options to "Play [title of program]" or "Copy to VCR". A button may also be used to display the "Playback Status" screen which provides additional options, including "Copy to VCR", "Play from beginning", "Play from current position" and "Skip to end". The "AllTouch Remote Control" is shown on the second page of the SA User's Guide attached as Exhibit L. (This page is not numbered in the SA User's Guide and is identified as the "inside of front cover" in the contents on page (iv) of the SA User's Guide.) As shown on this page, by operating the "LIST" button a user displays the "list of recordings" and the arrows and "SELECT" button are used to "Move through on-screen choices" and "Perform selected action".

41. Exhibits K1-K4 also each describes the Explorer 8000, 8000HD, 8240 and 8300's "controller coupled to the memory and the user interface for selecting data from the database in response to the accepted selections and providing the selected data in a digital form". The descriptions for the "PowerTV Operating System with HTML Client Engine" and "32-bit RISC Processors" are found on page 2 of the Explorer 8000, 8240 and 8300 Specifications and on page 3 of the Explorer 8000HD Specification.

42. Finally, Exhibits K1-K4 also each describe the Explorer 8000, 8000HD, 8240 and 8300's "speech producing sub-system coupled to the controller and the memory for converting the selected data from digital form to an analog signal". The descriptions for the "BTSC/SAP Encoder" (or "BTSC Encoder" in the case of the 8240) and the "Composite Audio/Video Outputs" are found on pages 2-3 of the Explorer 8000 and page 2 of the Explorer 8000HD, 8240 and 8300 Specifications.

43. The Explorer 8000, 8000HD, 8240 8300 PVRs each include all the elements of pending Claim 1.

44. In April 2007, Scientific Atlanta purchased a license from Command Audio. According to Command Audio's April 24, 2007 press release: "Command Audio Corp., a pioneer in the development of broadcast on-demand media technology, today announced that Scientific Atlanta, a Cisco company and a leader in the market for cable television set-top boxes, has purchased a license to use Command Audio's patented PVR (personal video recorder, also known as digital video recorder, or DVR) technology. Under terms of the agreement, Scientific Atlanta acquired a license to use Command Audio's patented technology in all of its PVR set-top box products." (http://www.commandaudio.com/_release.php?which=10)

The Yoshio Publication

45. The Examiner responsible for examining U.S. Patent Application No. 08/997,846 has rejected pending Claims 1, 33-37, 39-40, 51 and 58-61 under 35 U.S.C. § 102(a) as being anticipated by Japanese Unexamined Patent Application Publication H4-310631 ("Yoshio") and the remaining claims under 35 U.S.C. § 103(a) as being unpatentable over Yoshio in view of three other references and Official Notice.

46. In my Second Declaration, I provided my independent opinion that Yoshio does not provide sufficient description for one of ordinary skill in the art to understand how the apparatus would actually be built or operate. I have reviewed a new translation of Yoshio dated Nov. 2, 2007 and the Office Action dated August 10, 2007. In the Office Action, the Examiner states that my

opinions regarding enablement of Yoshio are not convincing, because "the use of databases and menus are old and well known and are seen to be inherent in the reference." However, it remains my opinion that Yoshio does not provide sufficient description for one of ordinary skill in the art to understand how the apparatus would actually be built or operate for the reasons stated in my March 8, 2006 Declaration. Yoshio's solution, to the extent it can be understood from the publication, does not appear to use a conventional database or menus. Instead Yoshio uses his own classification scheme as classified by the "information provider" with associated menus, see his paragraph 12. The existence of "old and well known" databases and menus for other uses does not tell one of ordinary skill in the art how the apparatus described in Yoshio would actually be built or operate.

47. Yoshio describes the problem of broadcasted information as "it is impossible to select only information on fields in which individual information recipients are interested." (See paragraph 3, lines 3-4.) Yoshio contrasts this with printed media: "In the case of newspapers, it is possible to pick up only information that information recipients want, from among a variety of fields. In addition, the recipients can read them at a time convenient to them, and it is possible to reread them any number of times for confirmation." (See paragraph 3, lines 12-13.) Yoshio's solution, to the extent it can be understood from his publication, was to allow a consumer to record broadcasted information on a portable playback only device that could be used in a crowded train or while driving a vehicle. (See paragraph 14, lines 5-8.) Yoshio fails to appreciate, let alone incorporate into his system, the principal power of broadcasted media, i.e., the immediacy and continuous availability of broadcasted information. For example, there is no suggestion in Yoshio that he was even interested in receiving continuous traffic reports updates, breaking news or stock quotes or could provide any capability for doing so.

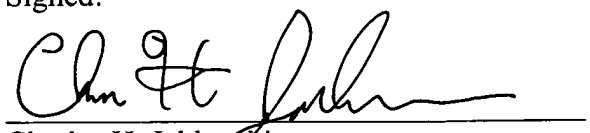
48. One of ordinary skill in the art on March 15, 1993, would have viewed Yoshio's solution (again, to the extent it could be understood) as providing playback separate from delivery of information on the broadcast network. For example, Yoshio states in paragraph 13, lines 9-10, that "news transmission is performed from night time to morning, and thus, the audio information is delivered to each home by the next morning." Since Yoshio provides for delivery separate from playback and desires to provide portability, a compact playback only device is used. See paragraph

14, lines 2-8. In addition, one of ordinary skill in the art on March 15, 1993 would have expected Yoshio to have relatively slow data transfer for writing to optical disk (as is also suggested by having transmission performed from night to morning) and for the recording process to render the disk unavailable for playback. Yoshio describes - at best - a concept that would theoretically allow a consumer to use an MO drive (of the type made by Yoshio's assignee, Hitachi) as the equivalent of an "electronic newspaper". Accordingly, Yoshio would have been viewed as undesirable for, and would not be suggestive of, an integrated approach such as the Ryan Architecture which can be used to receive continuous updates as well as to provide choice and control over playback.

49. As described in paragraphs 13-43 above, typical PVRs and audio-on-demand devices use the Ryan Architecture, and this architecture is fundamental for enabling characteristic features and functionality of those products. None of the PVRs and audio-on-demand devices described in paragraphs 13-43 above, nor any other PVRs or audio-on-demand devices of which I am aware, use the approach described in Yoshio, and further the approach described in Yoshio would not enable these products to perform their characteristic features and functionality as described above.

50. I understand that willful false statements and the like in this declaration are punishable by fine or imprisonment, or both (18 U.S.C. § 1001) and may jeopardize the validity of the above cited application or any patent issuing thereon. All statements made in this declaration of my own knowledge are true and all statements made on information and belief are believed to be true.

Signed:



Charles H. Jablonski

Date:

4-Feb-08

CHARLES H. JABLONSKI EXHIBITS

FOR

METHOD AND SYSTEM FOR INFORMATION DISSEMINATION WITH USER MENU INTERFACE (AS AMENDED)

DOCKET NO. 549222000101
APPLICATION NO. 08/977,846
FILING DATE: NOVEMBER 25, 1997

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Position Objective: Senior Operating and Executive Management Role in fast growth technology, media, communications business.

Experience Summary:
June 2001-Present President & CEO Myrio Corporation (Interim) Recruited as interim CEO by investors/Board to focus business, reduce costs and structure business for survivability until profitability. Raised $16MM in funding from existing investors, reduced staff and costs significantly, continued product evolution and instituting processes and procedures for stability and growth based on market. Closed significant domestic and international sales on target for 100% revenue growth in 2002.

October 2000-End Chief Operating Officer, Geocast Network Systems Overall operational responsibility for startup including engineering, product development, customer development, finance, marketing, HR, and operations. Wound down business in 2nd Q 2001; negotiated sales of IP, orderly termination of business activities and asset distribution.

July 1999-October 2000Senior Vice President Network Operations and Engineering,Geocast Network Systems Responsible for design, procurement and implementation of end-to-end data broadcast network for affiliate sites, implementation and operation of Network Operating Center. Responsibilities also included commercial operations, program and product management and IS.

February 1993-July 1999 Vice President Broadcast & Network Engineering National Broadcasting Company Complete technical and technology responsibility for all aspects of NBC, including Olympics, Owned Stations, International, Network Distribution from the strategic to the implementation and operational units. Additionally included business development and acquisitions, strategic technology assessment and development at Senior Management, GE Capital and Corporate (GE) level.

July 1983-February 1993 Managing Director, Chief Engineer, Director National Broadcasting Company Responsibilities ranged from Managing Director Engineering for two Olympic Games (Seoul and Barcelona), Chief Engineer for the Network, capital and strategic planning, and various fast track technology projects from conversion electronic graphics to conversion to stereo for which NBC was awarded an Engineering Emmy.

Professional Societies, Interests & Awards:
Society of Motion Picture and Television Engineers: Fellow, Served as President 1999-2000
Awarded Three Emmys
Serves on Advisory Board for RPI (Rensselaer Polytechnic Institute) School of Engineering
Chair NATAS (Emmy) Engineering Achievement Award Committee
Member: IEEE, Royal Television Society, BKSTS, and NATAS
Presented Royal Television Society Schoenberg Lecture London November 1999
Various Papers and Presentations over the past two decades at various conferences, seminars and association.
Featured as one of the "10 to Watch" Electronic Media 1999

Education:
Rensselaer Polytechnic Institute-Electrical Engineering
Union College-Electrical Engineering

Exhibit B

List of Materials

Exhibits:

1. Exhibit A - Curriculum Vitae
2. Exhibit B - List of Materials (Exhibit B)
3. Exhibit C - User's Manual for RCA CA-1000 from Command Audio Corporation
4. Exhibit D - Internal photographs of the Inno on file with the FCC ("the FCC Photographs") from https://fjallfoss.fcc.gov/prod/oet/forms/blobs/retrieve.cgi?attachment_id=715697&native_or_pdf=pdf
5. Exhibit D1 - Fourth page from the FCC Photographs entitled "Receiver Board – Front" with labels added
6. Exhibit D2 - Second page from the FCC Photographs entitled "Controller Board – Front" with labels added
7. Exhibit E - Inno User Manual from www.pioneerelectronics.com/vgn/images/portal/cit_11221/310280444enginno_usergd_5.17.06[1].pdf
8. Exhibit F1 - Sony SVR-3000 PVR Service Manual and Installation Guide
9. Exhibit F2 - Sony SVR-3000 PVR Operation Manual
10. Exhibit G1 - Block Diagram from Section 2-3 of SVR-3000 PVR Service Manual with highlighted elements
11. Exhibit G2 - Block Diagram from Section 2-3 of SVR-3000 PVR Service Manual with highlighted elements
12. Exhibit G3 - Block Diagram from Section 2-3 of SVR-3000 PVR Service Manual with highlighted elements
13. Exhibit G4 - Block Diagram from Section 2-3 of SVR-3000 PVR Service Manual with highlighted elements
14. Exhibit G5 - Block Diagram from Section 2-3 of SVR-3000 PVR Service Manual with highlighted elements
15. Exhibit H - Summary Judgment Order dated June 14, 2004 in the Sony Litigation
16. Exhibit I - Pages 5-6 of TiVo's Form 10K filed with the SEC on April 15, 2004 for the period ending January 31, 2004 from http://www.sec.gov/Archives/edgar/data/1088825/000119312504063164/d10k.htm
17. Exhibit J - Page 19 of TiVo's Form 10Q filed with the SEC on December 9, 2005 for the period ending October 31, 2005 from http://www.sec.gov/Archives/edgar/data/1088825/000119312505240039/d10q.htm
18. Exhibit K1 – Data Sheet for Scientific Atlanta Explorer 8300 from http://www.cisco.com/en/US/products/ps8613/products_data_sheets_list.html
19. Exhibit K2 - Data Sheet for Scientific Atlanta Explorer 8000 from http://www.cisco.com/en/US/products/ps8613/products_data_sheets_list.html

20. Exhibit K3 - Data Sheet for Scientific Atlanta Explorer , 8000HD from http://www.cisco.com/en/US/products/ps8613/products_data_sheets_list.html
21. Exhibit K4 - Data Sheet for Scientific Atlanta Explorer 8240 from http://www.cisco.com/en/US/products/ps8613/products_data_sheets_list.html
22. Exhibit L – Scientific Atlanta's Explorer Digital Video Recorder User's Guide from www.scientificatlanta.com/products/consumers/userguidepdfs/4003870.pdf

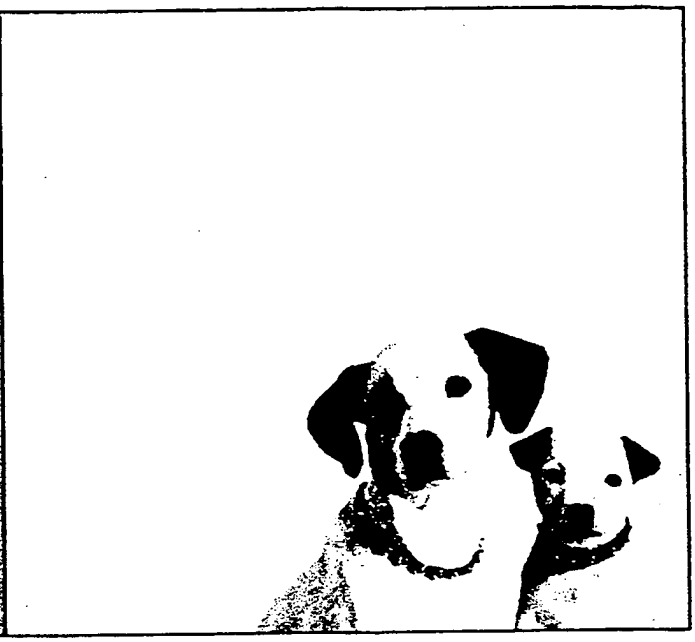
Other Materials:

1. U.S. Patent Application No. 08/997,846
2. U.S. Patent No. 5,406,626
3. U.S. Patent No. 5,524,051
4. U.S. Patent No. 5,590,195
5. U.S. Patent No. 5,751,806
6. U.S. Patent No. 6,330,334
7. Office Action having mailing date of December 13, 2005
8. First Declaration Under Rule 132 of Charles H. Jablonski, filed March 8, 2006
9. Second Declaration Under Rule 132 of Charles H. Jablonski, filed March 8, 2006
10. RCA CA-1000 device from Command Audio Corporation
11. Pioneer Electronics, Inc. Inno device from Command Audio Corporation
12. Command Audio's web site at www.commandaudio.com/licensees.php#XM%20Satellite%20Radio
13. Command Audio's December 15, 2006 press release from http://www.commandaudio.com/_release.php?which=7
14. www.scientificatlanta.com/Products/consumers/new_cableboxes.html
15. Command Audio's April 24, 2007 press release from http://www.commandaudio.com/_release.php?which=10
16. Translation dated November 2, 2007 of Japanese Unexamined Patent Application Publication H4-310631 ("Yoshio")
17. Office Action dated August 10, 2007

RCA

USER'S MANUAL

CA
COMMAND AUDIO



AUDIO-ON-DEMAND RECEIVER

CA1000

FEDERAL COMMUNICATIONS COMMISSION INFORMATION

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

In accordance with FCC requirements, changes or modifications not expressly approved by Thomson Consumer Electronics could void the user's authority to operate this product.

INTERFERENCE INFORMATION

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

SERVICE

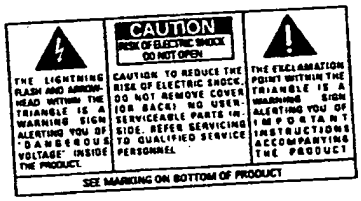
This product should be serviced only by those specially trained in appropriate servicing techniques. For instructions on how to obtain service, refer to the warranty in this guide.

Attach your sales receipt for future reference, or write down the date you purchased or received this product as a gift. This information will be valuable if service should be required during the warranty period.

Purchase Date _____

Name of Store _____

EID# _____



WARNING: TO PREVENT FIRE OR ELECTRICAL SHOCK HAZARD, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

WARNINGS AND SAFEGUARDS

USING YOUR RECEIVER WHILE DRIVING

Your safety and the safety of others on the road are very important to us. You should be able to operate and enjoy your RCA CA1000 Receiver safely while driving, but use caution. Keep in mind that using headsets or earphones while driving is dangerous (and illegal in several areas).

USING YOUR RECEIVER IN A PLANE

The CA1000 contains an FM receiver that can interfere with aircraft navigation systems if not properly handled. You must turn off the CA1000 when instructed to turn off portable electronic devices by airline personnel. To allow for safe air navigation and to comply with requirements of the Federal Aviation Agency, you must NOT turn the unit on or use it while in an aircraft (whether on the ground or in the air) unless you follow the instructions provided by crew members regarding the use of portable electronic devices.

The RCA CA1000 Receiver has a special PLAY ONLY mode. (See "PLAY ONLY" in Section 5, "Operating Your Receiver.") If airline personnel authorize you to turn on the CA1000 when in an aircraft, you may be able to listen to stored Command Audio programming at certain times. Check with airline personnel before using the PLAY ONLY mode.

SAFELY USING HEADSETS

To use a headset safely, please keep the following in mind:

- Do not play your headset at a high volume. Hearing experts advise against continuous extended play.
- If you experience ringing in your ears, turn down the volume or stop using the headset.
- Do not use a headset while driving a car or riding a bike. This may create a traffic hazard and is illegal in several areas.
- Even if your headset is an open-air type designed to let you hear outside sounds, don't turn up the volume so high that you can't hear sounds around you.

IMPORTANT SAFETY INSTRUCTIONS

Some of the following information may not apply to your particular product; however, as with any electronic product, precautions should be observed during handling and use.

- Do not expose product to rain and do not use near water, such as, sink, wet basement, swimming pool, etc.

- Do not expose product to extreme temperatures such as found near a hot radiator or stove, or in a car parked in the Summer sun.
- Connect power cord only to AC power or DC power source as marked on the product.
- Some products employ a polarized AC line plug (one blade is wider). This is a safety feature. The plug will go in the power outlet only one way. If the plug doesn't go into the outlet completely, turn the plug over and put it in the other way. If it still doesn't fit, contact a qualified electrician to change the outlet. Do not defeat the safety purpose of the polarized plug.
- Route power cord to prevent it from being pinched, or walked on, or melted by a hot stove or radiator.
- To clean, unplug AC power cord, then use a soft cloth dampened only with water.
- Unplug AC/DC adapter from outlet during a lightning storm or when product is left unused for a long period of time, to prevent damage due to lightning or power line surges.
- Care should be taken so that objects do not fall on, or liquids do not spill into the product.
- Never add accessories that the product has not been designed to accommodate.

- Use only the manufacturer's approved mounting instructions and hardware when installing product.
- Do not attempt to disassemble. This product does not contain customer serviceable components.
- Damage Requiring Service-This product should be serviced by qualified service personnel when:

  a. The power supply cord or the plug has been damaged.

  b. Objects have fallen on, or liquid has been spilled into the product.

  c. The product has been exposed to rain.

  d. The product does not appear to operate normally, or exhibits a marked change in performance.

  e. The product has been dropped or damaged.

BATTERY SAFETY PRECAUTIONS

- Any battery may leak electrolyte if mixed with a different battery type, if inserted incorrectly, or if all batteries are not replaced at the same time.
- Any battery may leak electrolyte or explode if disposed of in fire, or an attempt is made to charge a battery not intended to be recharged.

- Discard leaky batteries immediately. Leaky batteries can cause skin burns or other personal injury. When discarding batteries, be sure to dispose of them in the proper manner, according to your state and local regulations.

- Remove batteries if storing the unit for a month or more, to avoid damage from leaking batteries.

- Dispose of batteries in the proper manner, according to state and local regulations.

RECHARGEABLE BATTERIES

- Risk of fire or explosion if the following is not observed:

  a. Do not charge in this equipment any battery other than rechargeable alkaline AA batteries.

  b. Do not use or charge the batteries if they appear to be leaking, discolored, deformed or in anyway abnormal.

WELCOME TO AUDIO-ON-DEMAND

Your RCA CA1000 Receiver is designed for active listeners who wish to select, customize and listen to a broad range of information and entertainment never before available from a single source. Whether it's news, sports, weather, or lifestyle programming, information and entertainment are at your command at the press of a button.

The Audio-On-Demand service is provided by Command Audio Corporation and is sold separately.

Command Audio brings you hundreds of programs covering a wide variety of topics. Now you will be able to listen to the information and entertainment you want, when you want.

Visit Command Audio on the web at **www.commandaudio.com**

Command Audio Corporation and Thomson Consumer Electronics are unaffiliated entities.

NOTE: Thomson Consumer Electronics is not in any way liable for the accuracy or availability of the program information provided by the Command Audio service. In no event shall Thomson Consumer Electronics be liable for any amount representing loss of profits, loss of business, or indirect, special, or consequential damages in connection with the availability, provision or use of the Command Audio service or any information or services relating to the Command Audio service.

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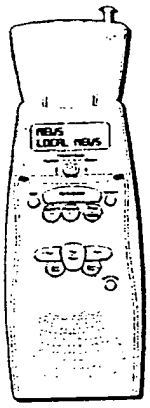
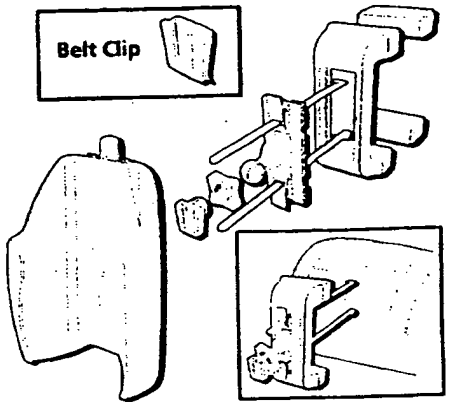
SECTION 1: GETTING STARTED

Make sure your package contains the following items:

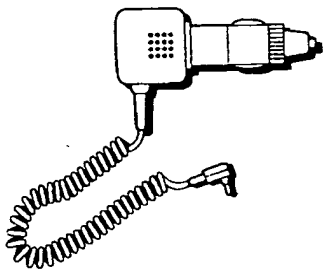
- RCA CA1000 Receiver
- Car mounting kit
- Car DC power adapter
- Cassette adapter
- AC power adapter
- Four (4) rechargeable alkaline "AA" batteries



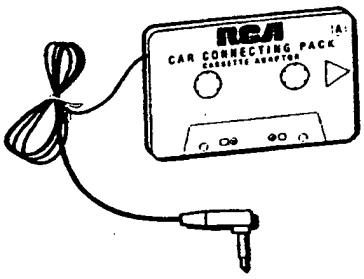
Receiver



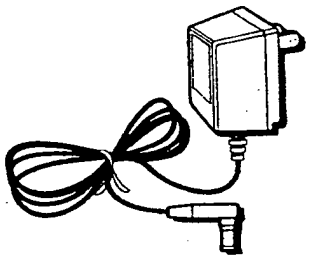
Car Mounting Kit



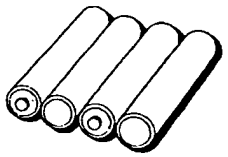
Car DC Power Adapter



Cassette Adapter



AC Power Adapter



Four Rechargeable Alkaline "AA" batteries

BEFORE YOU BEGIN

Before starting your RCA CA1000 Receiver for the first time, there are a few things you should know.

- The CA1000 is continuously updating and storing new programs when it is plugged into a power source, even while you are listening. This means that you don't have to worry about missing new programs while listening to other programs. The information will be there when you are ready to listen to it.

- The CA1000 is constantly recharging its batteries while it is plugged into a wall outlet or car lighter. We recommend always using an external power source. Batteries are provided as a convenience when an external power source is not available.

NOTE: The CA1000 will not charge standard alkaline batteries, only rechargeable alkaline batteries.

WHEN YOU ARE NOT LISTENING TO THE RECEIVER

1. Leave it plugged into a power source when possible.

2. Switch it to ON or STANDBY in order to update and store new programs. If you switch the CA1000 to OFF, it will NOT update and store new programs.

NOTE: To receive continuous updates of programs, you must activate your CA1000 with Command Audio. (See Section 3, "Activating Your Receiver.")

SECTION 2: PROVIDING POWER TO YOUR RECEIVER

There are three ways to provide power to your RCA CA1000 Receiver:

- An AC power adapter (wall adapter)
- A DC power adapter for your car (cigarette lighter)
- Four (4) alkaline "AA" batteries.

USING AN AC POWER SOURCE

To use the AC power adapter:

1. Plug the AC adapter into the wall outlet.
2. Plug the small end of the AC adapter into the power jack on the left side of the CA1000.

USING A CAR'S CIGARETTE LIGHTER FOR DC POWER

1. Plug the DC adapter into the car's cigarette lighter outlet.
2. Plug the small end of the DC adapter into the power jack on the left side of the CA1000.

NOTE: Some cars have cigarette lighters that do not supply power when the ignition is off. You will know your car lighter turns off with the ignition if the light on the DC adapter turns off with your car.

USING THE BATTERIES

Your CA1000 comes with four (4) rechargeable alkaline batteries. You also can use standard alkaline batteries. The rechargeable batteries will power your CA1000 for 4-6 hours before requiring recharging (depending on battery usage). The rechargeable batteries can take up to seven (7) hours to fully charge. Standard alkaline batteries will last up to eight (8) hours.

To install the batteries:

1. Remove the battery cover.
2. Put the batteries in, from left to right, making sure that the (+) and (-) are in the same direction as shown in the diagram in the compartment. The CA1000 will not work if the batteries are incorrectly installed.
3. Slide the battery cover back on.

LOW BATTERY INDICATOR

When the batteries are low, the CA1000 will sound an alert, and the indicator light (LOW BATT) on the front panel will blink.

- We recommend using rechargeable alkaline or standard alkaline batteries.
- Rechargeable alkaline batteries may result in shorter playing time than standard alkaline batteries.
- Remove batteries if storing the CA1000 for a month or more to avoid battery leakage.
- Dispose of batteries in the proper manner, according to federal, state, and local regulations.
- Any battery may leak electrolyte if mixed with a different battery type, if inserted incorrectly, if all batteries are not replaced at the same time, if disposed of in a fire, or if an attempt is made to charge a battery not intended to be recharged.
- Discard leaky batteries immediately to avoid possible skin burns or other personal injury.

NOTE: If batteries are left in the CA1000 while not plugged into an external power source, the batteries will gradually discharge – even if the CA1000 is in the OFF mode.

SECTION 3: ACTIVATING YOUR RECEIVER

Your receiver is preset at the factory to receive several popular programs for 24 hours from the first time you turn the power on. To continue receiving updates of programs after that 24-hour period, you must activate your RCA CA1000 Receiver with Command Audio.

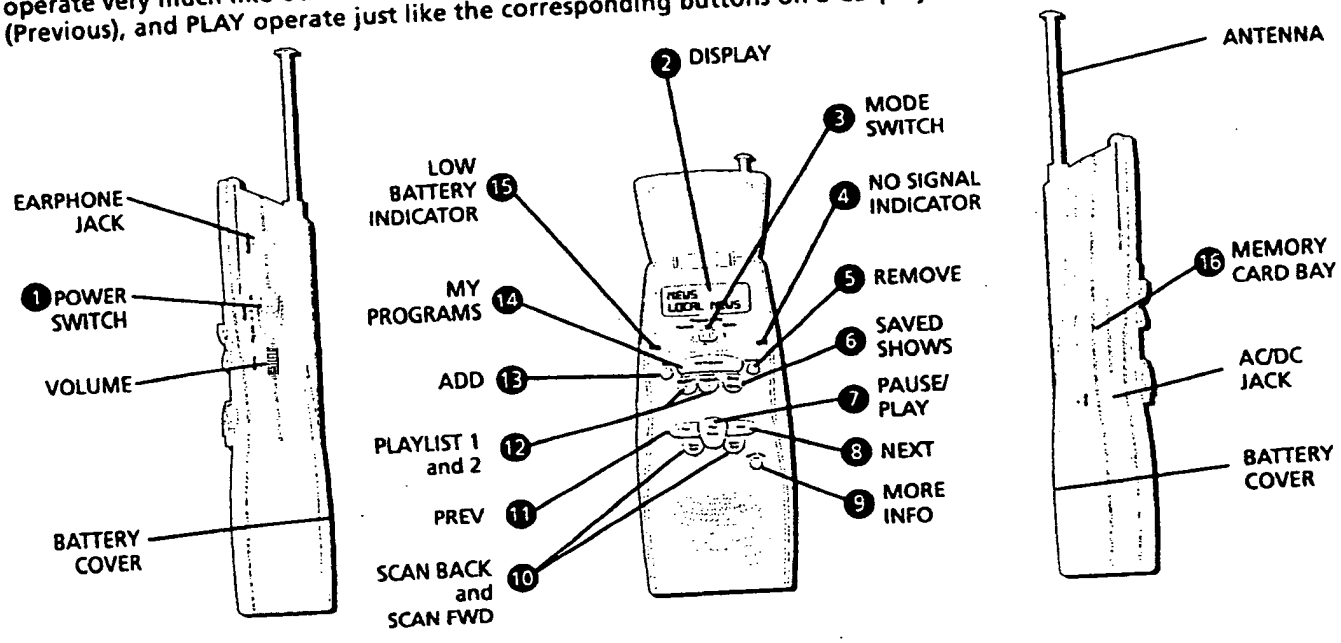
To activate your CA1000:

1. **Have your CA1000's EID Number (located on the bottom of your CA1000) and a credit card ready for the Command Audio Listener Care representative who will activate your account.**
2. **Dial the toll-free activation phone number printed on your CA1000:** 1-800-264-7289
   (This number is for activations only.)
3. Once you have activated your service, you may peel off the sticker.

NOTE: For other customer service needs, please call Listener Care at 1-800-755-4570.

SECTION 4: GETTING TO KNOW YOUR RECEIVER

This section will help familiarize you with your RCA CA1000 Receiver's controls. You will find that the controls operate very much like other devices you may have used in the past. For example, buttons such as NEXT, PREV (Previous), and PLAY operate just like the corresponding buttons on a CD player.



1 POWER SWITCH

On — Listen to previously received programs and receive new programs. Select from the Program Guide. Change Option Settings.

Standby — Receive new programs. All other functions are off.

Off — Power down the CA1000. For use in non-coverage areas or when use of an FM radio is not permitted, such as on an aircraft.

	Playback	Program Guide	Options
Display ❷	Presents current program, its place in sequence of available programs, and the total program time remaining.	Presents topic on 1st line and available programs in the topic on 2nd line.	Presents option on 1st line and possible settings for this option on 2nd line.
Mode Switch ❸	Listen to programs.	Select programs available on Command Audio for reception and storage.	Advanced features and settings.
No Signal Indicator ❹	Red indicator light will blink when the CA1000 cannot receive Command Audio signal due to antenna placement or is out of geographic reception range. The No Signal light will not blink when the CA1000 is connected to your car's cigarette lighter and your ignition is on.		
Remove ❺	Used to remove programs from My Programs, Playlist 1,2 or Saved shows.	None	None
Saved Shows ❻	Initiates playback of saved programs.	None	None
Pause/Play ❼	Pauses and resumes playback.	None	None
Next ❽	Moves to the next program in the current playlist.	Moves forward through the topics on the Program Guide.	Moves forward through the options in the CA1000.
More Info ❾	Presents bulletins to the listener, and information about the current program.	Presents the availability of programs.	Signal strength tone. Steady tone = strong signal Pulsing tone = weak signal
Scan Back and Fwd ❿	Moves through a program by subject, caller, or segment.	Moves among the programs available within a topic.	Moves among the settings available within an option.
Prev ⓫	Moves to the previous program in My Programs, Playlist 1, 2 or Saved Shows.	Moves backward through the topics on the Program Guide.	Moves backward through the options in the CA1000.
Playlists 1 and 2 ⓬	Initiates playback of a playlist.	Used after Add to add a program from the Program Guide directly to a playlist.	When reordering a playlist, selects which playlist is to be reordered.
Add ⓭	Places current program on Playlist 1, 2 or Saved Shows.	Used to add a program from the Program Guide to My Programs, Playlist 1 or Playlist 2.	For certain settings, confirms entry.
My Programs ⓮	Initiates playback of entire set of programs.	Used after Add to add a program from the Program Guide to My Programs.	None
Low Battery Indicator ⓯	When the batteries are low, the CA1000 will play a low battery warning, and the red indicator light will blink.		
Memory Card Bay ⓰	For future expansion		

SECTION 5: OPERATING YOUR RECEIVER

Before operating your RCA CA1000 Receiver, make sure that you have already:

1. Read and understood all of the safety instructions.
2. Installed the CA1000's batteries and connected the CA1000 to a power source.
3. Activated the CA1000 by calling Command Audio Listener Care at 1-800-264-7289.

Now you're ready to enjoy all that your CA1000 and Command Audio have to offer.

NOTE: It may take several hours before new programs have been received and stored in your CA1000's memory. Leave the CA1000 plugged into a power source, with the POWER switch set to either ON or STANDBY. See your Program Guide insert for a schedule of when the most recent edition of each program will be available.

TURNING THE RECEIVER ON

To turn the CA1000 on:

1. Slide the POWER switch on the right side of the CA1000 to ON.
2. Move the MODE switch to the PLAYBACK position.
3. Adjust the VOLUME control, (located below the POWER switch).
4. Listen to the brief greeting from Command Audio.

NOTE: Always ensure that the POWER switch is in the OFF position before removing all power (i.e. AC wall adapter, DC car adapter and batteries) from the CA1000. Failure to do so can temporarily corrupt the memory.

PLAYING PROGRAMS

There are four (4) ways to play back programs that you have selected:

1. Press MY PROGRAMS to hear all of the programs that the CA1000 has collected and arranged alphabetically by topic.
2. Press PLAYLIST 1 to listen to programs in PLAYLIST 1.
3. Press PLAYLIST 2 to listen to programs in PLAYLIST 2.
4. Press SAVED SHOWS to hear specific program editions you have saved.

- **MY PROGRAMS**
  Use MY PROGRAMS to store programs that you wish to hear regularly , at the press of a button. Programs are arranged alphabetically under "Topics" from the Program Guide. This is your master list of programs. Any program placed on PLAYLIST 1 and PLAYLIST 2 will also be placed on MY PROGRAMS.

- **PLAYLIST 1 AND PLAYLIST 2**
  Use PLAYLIST 1 and PLAYLIST 2 to store programs that you want to hear at a particular time of day or programs enjoyed by one user. For example, you may wish to store programs in PLAYLIST 1 for your morning commute and PLAYLIST 2 for your evening

commute. Or, if more than one person uses the CA1000, that person may choose to store his or her programs in PLAYLIST 1 or PLAYLIST 2.

- **SAVED SHOWS**
  Use SAVED SHOWS to store programs you do not want to have removed. To play saved shows, press SAVED SHOWS. If there are multiple shows saved, use NEXT or PREV to select the program you want. The saved shows will play the time stamp of the program, such as "Local News, October 12th."

- **PLAY ONLY**
  1. This is another way to listen to your programs. With the POWER switch in the OFF position, hold down the PAUSE/PLAY button for three (3) seconds to trigger the PLAY ONLY mode. In this mode you will not be able to receive program updates, but you can listen to your stored programs.

  2. To turn PLAY ONLY off, hold down the PAUSE/PLAY button for three (3) seconds.

NOTE: This mode allows you to safely listen to programs stored in the CA1000 while you are in an aircraft (after airline personnel have announced that it is permissible to do so).

MOVING FROM PROGRAM TO PROGRAM

Press NEXT to advance to the next program. Press PREV to return to the previous program. Press and hold the NEXT or PREV buttons to move rapidly from program to program.

MOVING WITHIN A PROGRAM

Press SCAN FWD or SCAN BACK to move between stories, callers or segments within a program. Press and hold the SCAN buttons to move rapidly between stories, callers or segments.

PAUSE/PLAY

Press PAUSE/PLAY while listening to a program to pause its playback. Press PAUSE/PLAY again to resume the program's playback.

BULLETINS

While listening to your favorite programs you can choose to be notified of traffic reports, Command Audio news or emergency reports. (See "Bulletin" in Section 9, "Using the Options.")

SECTION 6: RECEPTION

HOW PROGRAMS ARE UPDATED

Your RCA CA1000 Receiver is constantly updating and storing new programs when connected to a power source, even while you're listening. This means you don't have to worry about missing new programs while listening to other programs. The information will be there when you're ready to listen to it.

Programs are updated throughout the day. Your Program Guide (located in a pocket of the Quick Start Guide) tells you how often new editions of your selected programs are typically available in your CA1000.

ANTENNA AND NO SIGNAL

It may not always be necessary to extend the antenna for good reception of the Command Audio signal. If the NO SIGNAL light is blinking, extend, reorient, or collapse the antenna, or relocate the CA1000. When the NO SIGNAL light is off, you are receiving the signal.

When the mode switch is in the STANDBY position, the display will indicate the signal status.

To get audible feedback of whether your CA1000 is receiving signal, move the POWER switch to ON and the MODE switch to OPTIONS. Press MORE INFO and listen for a tone. A pulsing tone indicates you do not have a strong enough signal to receive Command Audio programming. A steady tone indicates you have a strong signal. Change the CA1000's antenna orientation or position until you hear a steady tone. Press MORE INFO again to turn off the tone.

The NO SIGNAL light will not blink when the CA1000 is connected to your car's cigarette lighter and your ignition is on.

EFFECT OF TRAVELING OUT OF RANGE OF THE SIGNAL

Command Audio service will be available in various cities throughout the United States. See **www.commandaudio.com** for the current list of cities where the service is offered. If you travel out of range of the Command Audio signal (or if you set the power switch to OFF), the CA1000 will stop updating programs. You will, however, be able to play previously stored programs from your CA1000's memory. Once you enter any Command Audio service area, your programs will be updated as usual (of course, if you're traveling outside your home market, local programs such as news, weather, sports and traffic will not be updated).

NOTE: If you missed receiving a scheduled update due to being out of signal range or loss of power, you will not receive a new update until the next scheduled transmission. (For example, if you typically get an update of a program every evening and missed this evening's update due to loss of signal or power, then you will not get the next update until tomorrow evening.)

SECTION 7: PROGRAM AVAILABILITY

Your playlist may have a combination of shows that are available at different times throughout the day, once a day or once a week.

When an edition of a program is not available, MY PROGRAMS, PLAYLIST 1, and PLAYLIST 2 will announce when the next edition will be available.

NOTE: To find out the edition of the program you are listening to, press MORE INFO.

AUTOMATIC DELETION

The RCA CA1000 Receiver marks programs to be deleted or replaced when:

- A new edition of that program is received.
- Another program you have selected needs the memory.

If you want to keep a specific edition of a program, save it in SAVED SHOWS. (See "Saving Programs" in Section 8, "Adding, Removing and Saving Programs.")

NOTE: The CA1000 cannot update and store a program that is paused or playing. If the CA1000 is left in the ON mode, programs that have been played may be marked for deletion.

SECTION 8: ADDING, REMOVING AND SAVING PROGRAMS

Your RCA CA1000 Receiver comes with an electronic Program Guide. Use this Program Guide to select the programs you want to hear from Command Audio. The CA1000 automatically and continuously updates your selected programs for you.

MY PROGRAMS, PLAYLIST 1, and PLAYLIST 2 are preset at the factory, but you can customize them on your CA1000 by adding or removing programs, or by changing the order in which programs are played.

NOTE: Your CA1000 can have up to eight (8) hours of stored programming. This includes programs you have saved in SAVED SHOWS.

ADDING PROGRAMS

1. Slide the MODE switch to PROGRAM GUIDE.

2. Press the NEXT or PREV buttons to review the topics available on the service.

3. Press the SCAN FWD and SCAN BACK buttons to review the programs within the topics that you can add to MY PROGRAMS, PLAYLIST 1, and PLAYLIST 2. Press MORE INFO while a program is displayed to find out how often a new edition of that program is available.

   - Before pressing the ADD button, if the program is already on MY PROGRAMS, PLAYLIST 1, or PLAYLIST 2, you will see a solid green light next to MY PROGRAMS, PLAYLIST 1, and/or PLAYLIST 2.

4. When you decide on a program, press ADD. You will hear an audible prompt, "Add To..." You will see a green light blink next to MY PROGRAMS, PLAYLIST 1, and PLAYLIST 2.

5. Press MY PROGRAMS, PLAYLIST 1, or PLAYLIST 2 to select the list to which the new program will be added. The CA1000 will audibly confirm that the program has been added.

6. Slide the MODE switch back to PLAYBACK when finished. Ongoing new editions of the program will be available on a regular basis, following the initial transmission from Command Audio.

NOTE: Adding a program multiple times to a playlist will not affect the list. Any program added to PLAYLIST 1 and/or PLAYLIST 2 will automatically be available in MY PROGRAMS.

ADDING PROGRAMS TO PLAYLIST 1 OR PLAYLIST 2 FROM MY PROGRAMS

While in the PLAYBACK mode, if you want to add a program from MY PROGRAMS to PLAYLIST 1 or PLAYLIST 2:

1. Press MY PROGRAMS.

2. Use PREV and/or NEXT to find the program you want.

3. Press ADD. You will hear the audible prompt, "Add To..." and the green light next to PLAYLIST 1 and PLAYLIST 2 will blink.

4. Press PLAYLIST 1 or PLAYLIST 2. You will hear the audible prompt "Added."

NOTE: Programs will appear in your playlist in the order you have selected them. The display shows the number of programs on a playlist and the position of the current program in that list. For example, program two of ten would read "2-10" in the lower left corner.

You can reorder the programs on PLAYLIST 1 or PLAYLIST 2 in any sequence you wish. (See "Reorder List" in Section 9, "Using the Options.")

SAVING PROGRAMS

If you like a particular edition of a program but don't have time to listen to it, or if you don't want that edition replaced when a newer edition becomes available, you can save that edition and play it later. To do this:

1. Select the PLAYBACK mode.

2. Choose the program from MY PROGRAMS, PLAYLIST 1, or PLAYLIST 2.

3. Press ADD. You will hear an audible prompt, "Add To" and the SAVED SHOWS light will blink.

4. Press SAVED SHOWS. You will hear an audible prompt "Added, Saved Shows."

SAVING PROGRAMS WITH TIME LIMITS

Some programs have a time limit on how long they may be saved. If you try to save such a program, the CA1000 will alert you audibly. When the time limit is reached, the CA1000 will remove the show automatically.

NOTE: Depending upon the programs you select, approximately eight (8) hours of memory are available for storing programs. These eight (8) hours of memory must be shared between incoming programs and stored Saved Shows. As you save more shows, you will decrease the CA1000's ability to store new programs.

REMOVING PROGRAMS FROM MY PROGRAMS, PLAYLIST 1 AND PLAYLIST 2

Follow the steps below to remove a program.

1. Select the PLAYBACK mode.
2. Press the playlist or MY PROGRAMS button that contains the program you want to remove.
3. Use PREV and/or NEXT to choose the program you want to remove.
4. Press REMOVE. You will hear an audible prompt asking you to confirm that you would like to remove the program you selected.
5. Press REMOVE again to confirm deletion. You will hear an audible prompt confirming that the program has been removed.

NOTE: If you remove a program from a playlist, it will still be available under MY PROGRAMS. If you do not want to receive this program at all, remove it from MY PROGRAMS using the above procedure. This will also remove it from the playlists.

REMOVING SAVED SHOWS

1. Select the PLAYBACK mode.
2. Press SAVED SHOWS.
3. Use PREV and/or NEXT to choose the program you want to remove.
4. Press REMOVE. You will hear an audible prompt confirming that you would like to remove the selected program.
5. Press REMOVE again. You will hear an audible prompt confirming that the program has been removed.

SECTION 9: USING THE OPTIONS

Your RCA CA1000 Receiver comes with special options that allow you to further customize it.

To review these options:
1. Set the Power switch to ON, slide the MODE Switch to OPTIONS.
2. Use NEXT and/or PREV to select the described option.
3. Use the SCAN buttons to advance choices within a specific option setting.

DESCRIPTION OF OPTIONS

This section describes each option and the various settings available for that option.

AUTO PLAY

When you turn your CA1000 on, it will automatically begin playing the list you have selected in the AUTO PLAY option.
1. AM-L1, PM-L2 (in the morning PLAYLIST 1, in the afternoon/evening PLAYLIST 2)
2. PLAYLIST 1
3. PLAYLIST 2
4. MY PROGRAMS

BULLETIN

If you select INSTANT PLAY, the CA1000 will interrupt the currently playing program as soon as a bulletin arrives, and then return to the program that was playing. If you choose MORE INFO when a new bulletin arrives, the "More Info" light will blink and the CA1000 will wait for you to press the MORE INFO Button before presenting the bulletin. If you choose OFF, the bulletin will not be presented, and you will not be notified (either visually or audibly) of any bulletins. Examples of bulletins: traffic reports, Command Audio news or emergency reports.
1. INSTANT PLAY
2. MORE INFO
3. OFF

PLAYLISTS

PRESENT ALL allows you to hear all the programs on PLAYLISTS 1 and 2, even if you have already listened to them. PRESENT NEW plays only new programs on PLAYLIST 1 and 2 that you have not yet heard.
1. PRESENT ALL
2. PRESENT NEW

REORDER LIST

This option allows you to reorder the program sequence in the selected playlist. To change the order of a program sequence:

1. Select the OPTIONS mode.
2. Press the NEXT button until REORDER LIST appears on the top line of the display. The green lights will blink under PLAYLIST 1 and PLAYLIST 2.
3. Select the playlist you would like to reorder.
4. Use NEXT and/or PREV to choose the program you want to move.
5. Use the SCAN buttons to change the sequence number. The display will show the current sequence number.
6. Press ADD to confirm your choice.
7. After pressing ADD, the word "Done" will appear in the lower right corner of the display. Pressing ADD at this point will cause you to exit the Reorder List option. Pressing NEXT or PREV will allow you to reorder additional programs; repeat the process starting with step 4.

SYS STATUS

This option provides you with a troubleshooting code for use if you ever contact Command Audio Listener Care for assistance in solving technical problems.

SECTION 10: USING THE RECEIVER IN YOUR CAR

Your RCA CA1000 Receiver is designed for safe use in a car. The Car Accessories Kit is provided for conveniently mounting the CA1000 in your car.

The Car Accessories Kit contains the following items:

- Car DC power adapter
- Cassette adapter
- Car mounting kit

NOTE: Some cars have cigarette lighters that do not supply power when the ignition is turned off. You will know your car lighter turns off with the ignition if the light on the car DC power adapter turns off with your car.

If your car's cigarette lighter does not supply power when the car is turned off, it will be necessary to take your CA1000 with you and plug it into an AC power source when parked for periods of time that exceed the battery's STANDBY mode capacity (4-6 hours).

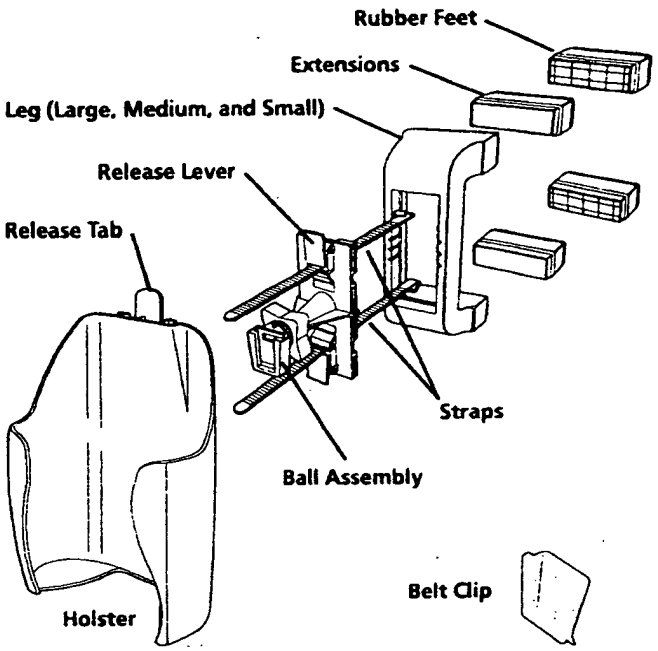
LISTENING TO THE RECEIVER IN YOUR CAR

To use the cassette adapter:

1. Insert the earphone plug from the cassette adapter into the earphone jack of the CA1000.

2. Insert the cassette adapter into your car's cassette deck. Adjust the volume on your CA1000 and your car radio to the desired levels.

HOW TO INSTALL THE CAR MOUNTING KIT

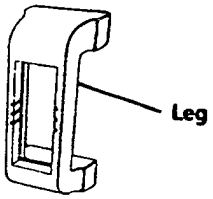


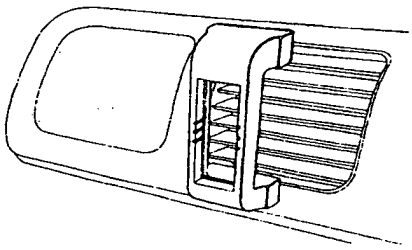
STEP: 1

Select the best vent for mount attachment. Vents in the center of the dashboard are the best choice because (a) the cigarette lighter/battery connection is close at hand; (b) it is safe and easy to reach the receiver from this position; and (c) you will get the best reception.

STEP: 2

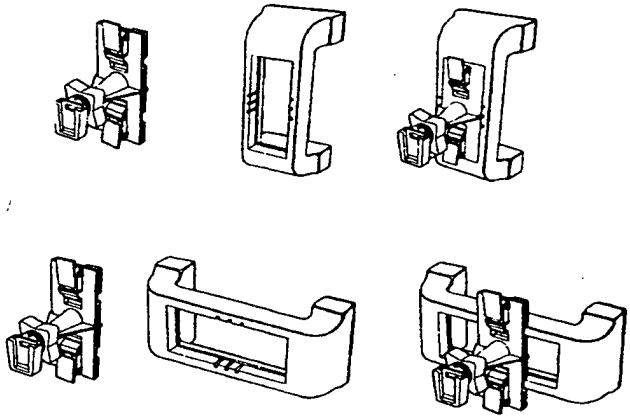
Choose which leg best fits your car. The leg should make contact with a solid area around your air vent. Insert the rubber feet into the selected leg.





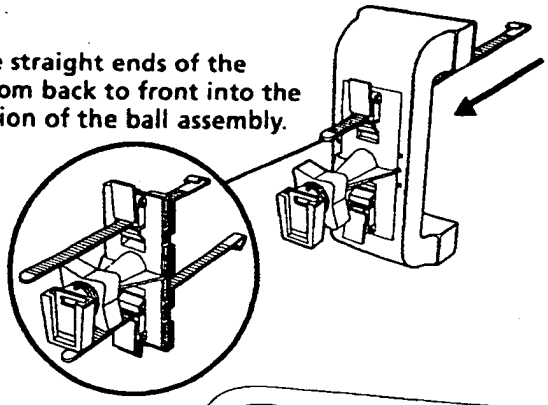
STEP: 3

Snap the leg onto the ball assembly. The larger leg has three (3) different snap-on positions so that you can adjust the height of the receiver. If your car has a tall and narrow vent, mount the leg horizontally and snap the ball assembly vertically.



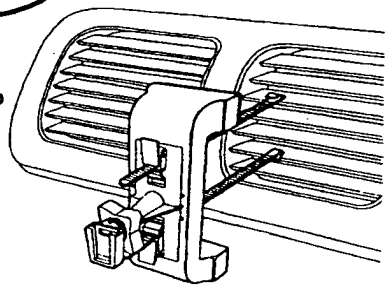
STEP: 4

Slide the straight ends of the straps from back to front into the clip portion of the ball assembly.



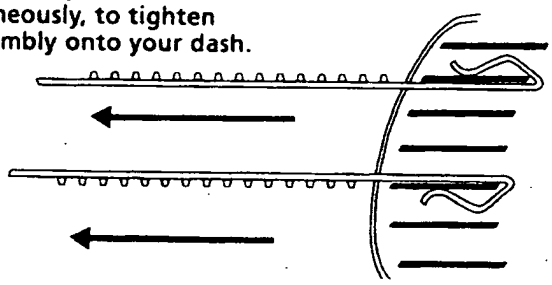
STEP: 5

Attach the hooked sides of both straps to the air vent.



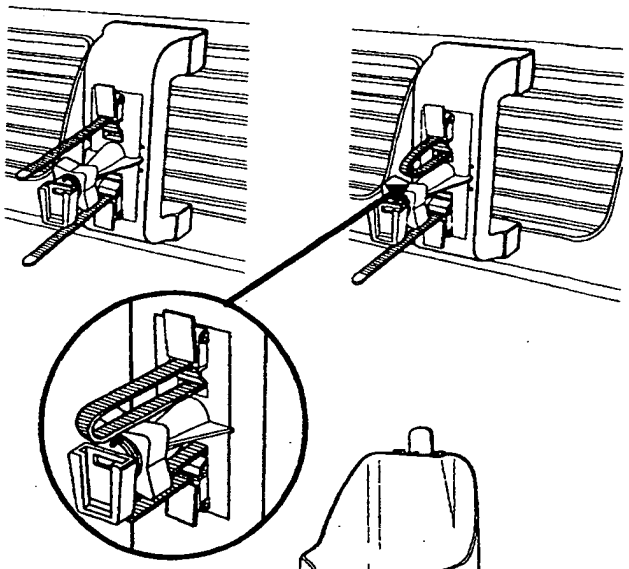
STEP: 6

Pull both straps simultaneously, to tighten the assembly onto your dash.



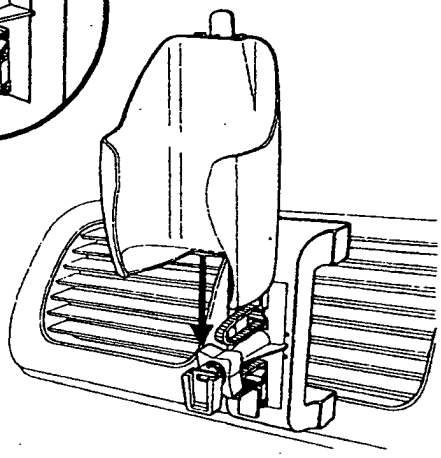
STEP: 7

Feed the excess strap length into the return slots.



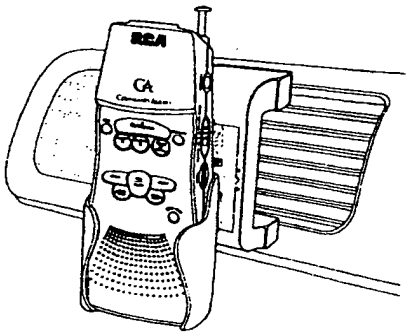
STEP: 8

Slide the holster onto the mount.



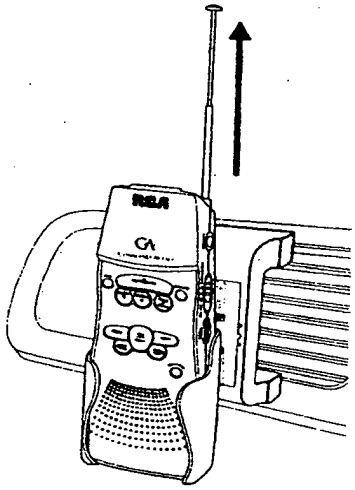
STEP: 9

Insert the CA1000 into the holster.



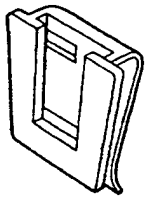
STEP: 10

Plug in the DC power cord and fully extend the antenna. There is a swivel joint at the bottom of the antenna. The best antenna position is usually behind the rear view mirror.



USING THE HOLSTER WITH THE BELT CLIP

You can slide the holster off the mount and attach it to the belt clip for portable use. Push the release tab on the back of the holster and slide the holster up to remove it. Then replace it in the belt clip.



REMOVING THE CAR MOUNTING KIT

Remove the excess straps from the return slots. Press down on the strap release levers and pull the car kit away from the dashboard. Push the straps into the vent to unhook them from the air vent. Then slowly pull the straps out of the vent.

SECTION 11: TROUBLESHOOTING

CA1000 DOES NOT OPERATE

Make sure the POWER switch is in the ON position and the MODE switch is in the PLAYBACK position. If "Pause" is flashing in the lower right corner of the display, press PAUSE/PLAY to resume playback. If not all of your programs are playing, check the option PLAYLISTS to make sure it is set for PRESENT ALL, to have all of your programs play.

If using battery power and the display is blank, the batteries may be weak.

- Connect an AC or DC power adapter to recharge the batteries, or insert fresh batteries.

If using AC power, check to see if the power cord is plugged in.

- If the cord is plugged in, turn the CA1000 off, unplug the power cord and remove the batteries. Reinsert the batteries from left to right following the (+) and (–) diagram in the battery compartment, and plug in the AC power cord again.

If using DC power (car cigarette lighter), check to see if the cord is plugged in and the adapter's green light is lit.

- If the light is not lit, start the car - some car cigarette lighters do not supply power when the car ignition is off.

ALL THE LIGHTS ARE ON AND THE BUTTONS WILL NOT OPERATE

Unplug the AC or DC power cord and remove the batteries. Reinsert the batteries from left to right following the (+) and (–) diagram in the battery compartment, and plug in the AC or DC power cord again.

NO SIGNAL LIGHT IS BLINKING

If the CA1000 is in a coverage area, extend, reorient or collapse the antenna, or relocate the CA1000 to improve reception. If the NO SIGNAL light is still blinking, move the POWER switch to ON and the MODE switch to OPTIONS. Press MORE INFO and listen for a tone. A pulsing tone indicates you do not have a strong enough signal to receive Command Audio programming. A steady tone indicates that you have a strong signal. Once you are receiving a strong signal, press MORE INFO again to turn off the tone.

NEW PROGRAMS HAVE NOT BEEN RECEIVED

To receive updates, make sure the POWER switch is in the ON or STANDBY position at all times. To play programs, make sure the POWER switch is in the ON position and the MODE switch is in the PLAYBACK position. Check to see when the program you selected is available.
Check to see if the NO SIGNAL light is flashing. Programs that are playing or paused will not be updated.

NOTE: Depending upon the programs you select, the CA1000 will hold approximately eight (8) hours of programs. If all of the programs you have selected exceed eight (8) hours in duration, not all of the programs can be stored in the CA1000 at the same time. If this is the case, remove some programs from MY PROGRAMS, PLAYLIST 1 OR PLAYLIST 2. (See "Removing Programs from MY PROGRAMS, PLAYLIST 1 AND PLAYLIST 2," in Section 8, "Adding, Removing and Saving Programs.")

GENERAL CARE

To keep your CA1000 working properly and looking good, follow these guidelines:

- Avoid putting the CA1000 near heating appliances and devices that generate electrical noise (for example, motors or fluorescent lamps).
- Avoid dropping the CA1000, as well as other rough treatment.
- Never use a strong cleaning agent or abrasive powder because this will damage the finish. If you need to clean your CA1000, use a soft cloth dampened only with water.
- Keep the original packaging in case you need to ship the CA1000 at a later date.

SECTION 12: LIMITED WARRANTY

What your warranty covers:
- Any defect in materials or workmanship.

For how long after your purchase:
- 90 days – CA1000 exchange, which includes parts and labor.

What we will do:
- Exchange the CA1000 with a new or, at our option, refurbished CA1000.

How you get service:
- Call 1-800-755-4570 and have your CA1000's EID number ready. It is on the bottom of your CA1000.
- A representative will troubleshoot your problem over the phone.
- If the representative determines that you should receive a replacement CA1000 you will be provided with a Service Request (SR) number and the location of a nearby exchange point, if one exists. No returns will be accepted without the SR number.

The representative will advise the address to mail a cashier's check or money order for payment if there are any out of warranty labor or parts charges, and you elect not to use your credit card.

To receive a replacement CA1000 before you return yours:

Option I:
1. Provide your Discover, MasterCard or Visa account number and expiration date to your phone representative. This is for security purposes only and your account will not be charged at this time.
2. We will send you a replacement CA1000.
3. If you return the CA1000 to us within 14 days from the date you were provided a SR number, only items not covered by warranty will be charged to your account. If your CA1000 is not received within 14 days, the suggested retail value of the CA1000 will be charged to your credit card. This amount will be credited, less a $10 handling fee, if the CA1000 is subsequently received.
4. Ship your defective Receiver back to us using the replacement CA1000's carton. Please retain all accessories. Shipping instructions will be included in the carton along with your SR number which will allow you to easily ship the CA1000 back to us.

Include with the shipment:
- Evidence of purchase date such as a bill of sale.
- A brief note describing your CA1000's problem.
- Your name, address and phone number.

Option II:
1. We will send a replacement CA1000 to our exchange point.
2. The exchange location will notify you of its arrival.

Take your CA1000 and evidence of purchase date, such as a bill of sale, to the exchange location and you will be provided the new or refurbished CA1000. Please retain all accessories. If repairs are covered by your warranty, you will not be charged.

To receive a replacement CA1000 after we have received your CA1000:
Write the SR number on the outside of the carton used to return the CA1000. Make sure you insure your shipment in case of damage or loss.

Carefully pack the CA1000 using the original box and packing material if possible. Please retain all accessories that were included with your CA1000.

Include with the shipment:
- Evidence of purchase date such as a bill of sale.
- A brief note describing your CA1000's problem.
- Your name, address and phone number.

After we receive your product, a new or refurbished CA1000 will be shipped to you.

Thomson assumes no responsibility for warranty shipments from the customer to the factory if not shipped in the manner prescribed by Thomson.

Return transportation, storage, handling and insurance costs are your responsibility. We accept no responsibility in case of damage or loss.

What your warranty does not cover:
- Acts of God.
- Adjustment of customer controls.
- Damage from misuse or neglect.
- A CA1000 that has been modified or incorporated into other products or is used for institutional or other commercial purposes.
- Batteries.
- CA1000s purchased or serviced outside the U.S.A.
- Shipping damage if the CA1000 was not packed and shipped in the manner prescribed by Thomson.
- Storage fees. They may be charged by the exchange point if you fail to pick up the replacement CA1000 in a timely manner.
- Loss of programming.

Product Registration:
- Please complete and mail the Product Registration Card packed with your product. It will make it easier to contact you should it ever be necessary. The return of the card is not required for warranty coverage.

How state law relates to warranty:
- This warranty gives you specific legal rights and you may have other rights that vary from state to state.

If you purchased your product outside the United States:
- This warranty does not apply. See your dealer for warranty information.

CA1000 ACCESSORIES

For pricing information and ordering instructions, please call 1-800-338-0376.

DOOR, BATTERY 244047

DOOR, MEMORY SLOT 244048

DOOR, DISPLAY 244049

ANTENNA 244050

CLIP, BELT 244051

ADAPTER, AC/DC 244052

ADAPTER, DC 244053
(CAR CIGARETTE LIGHTER ADAPTER)

CRADLE, RECEIVER 244054
(HOLSTER)

KIT, CAR MOUNT 244055
- MOUNT, BALL
- LEG, SMALL
- LEG, MEDIUM
- LEG, LARGE
- FEET, RUBBER (2)
- STRAPS (2)
- EXTENSIONS (2)

ADAPTER, CAR CASSETTE 54097

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TRADEMARKS

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PATENT INFORMATION

The RCA CA1000 Receiver is manufactured in part under one or more of the following Command Audio Corporation, U.S. and International Patents: 5,590,195; 5,524,051; 5,406,626; 5,751,806; 5,809,472; 5,815,671. U.S. and foreign pending patent applications.

The AMBE® voice coding technology embodied in this product is protected by intellectual property rights, including patent rights, copyrights and trade secrets of Digital Voice Systems, Inc.

Dolby® Digital technology in this product is protected by intellectual property rights of Dolby Laboratories, Inc.

HOW YOU GET SERVICE:

Call 1-800-755-4570 and have your CA1000's EID number ready. The EID number information is on the bottom of your CA1000.

THOMSON CONSUMER ELECTRONICS
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Indianapolis, IN 46290

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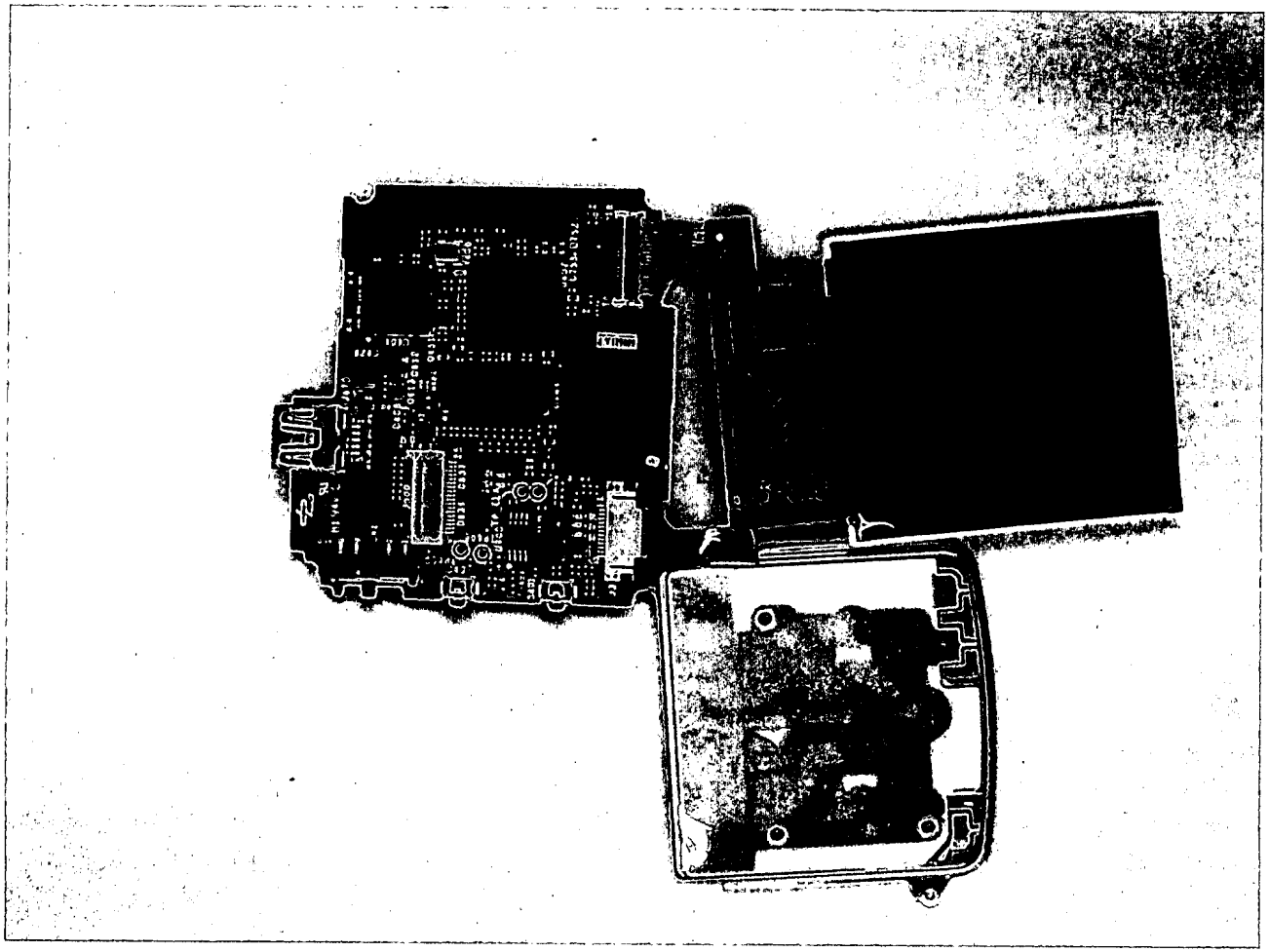
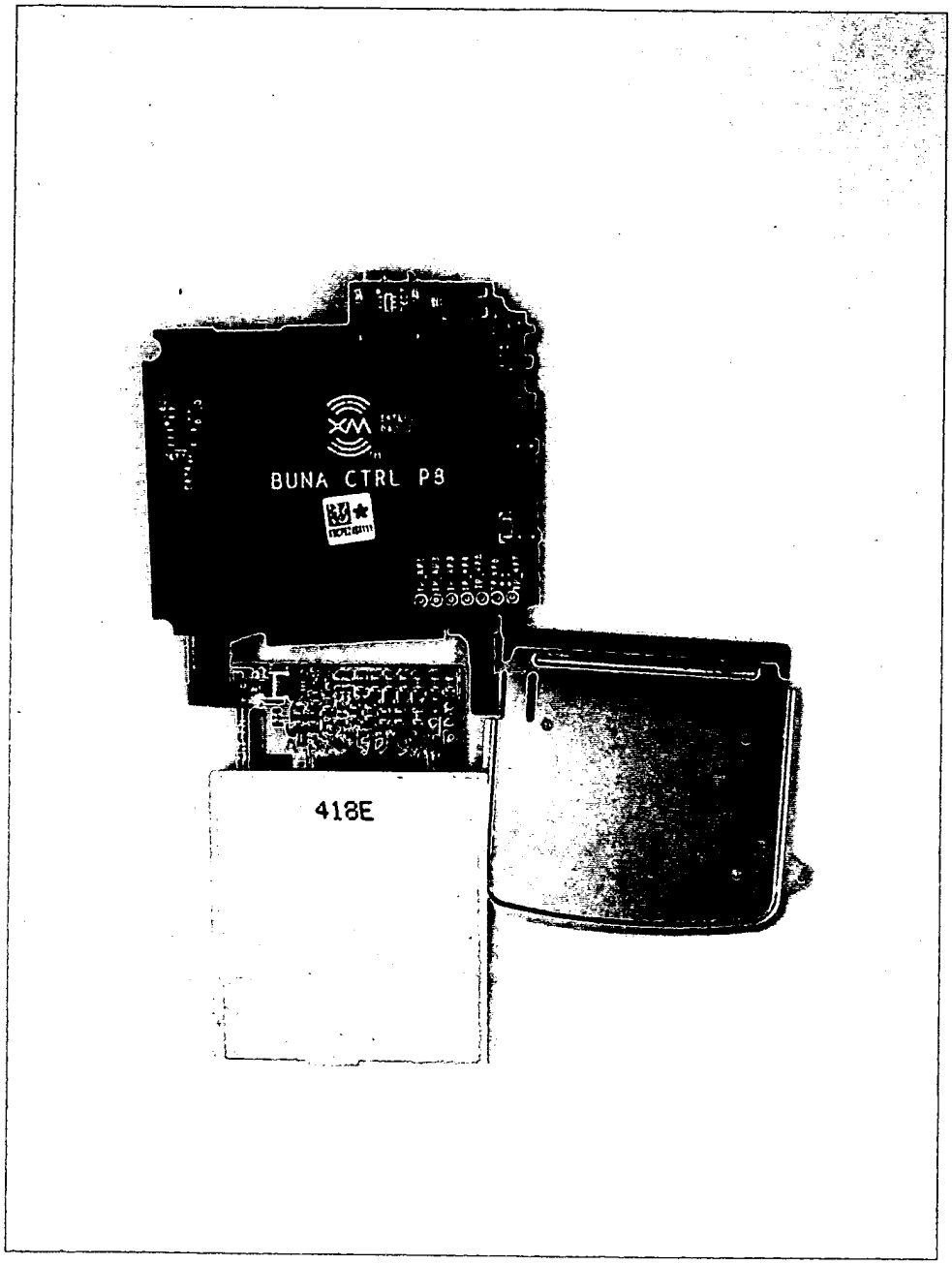
Revision C1-A

XM2go50

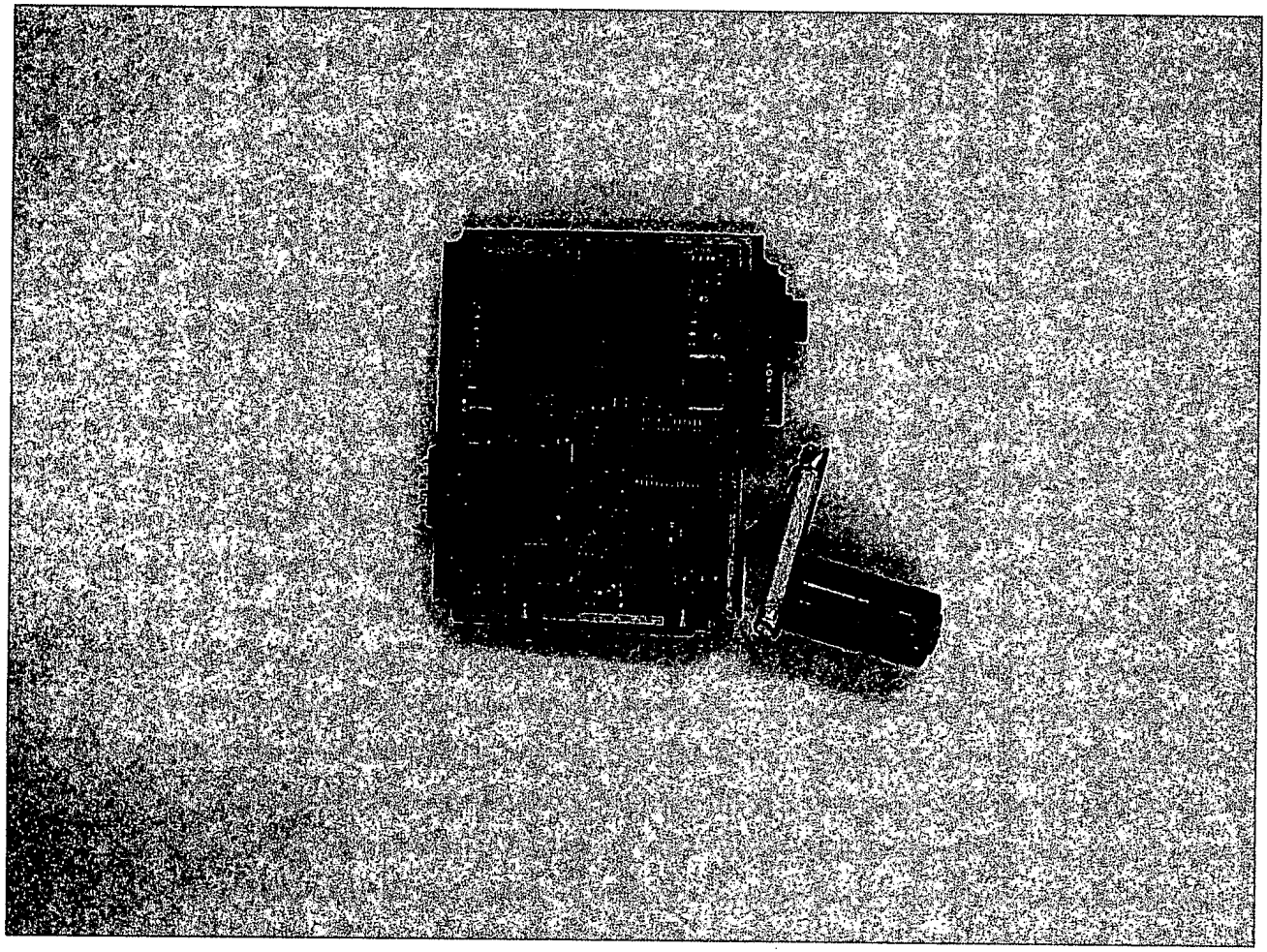
Internal Photographs



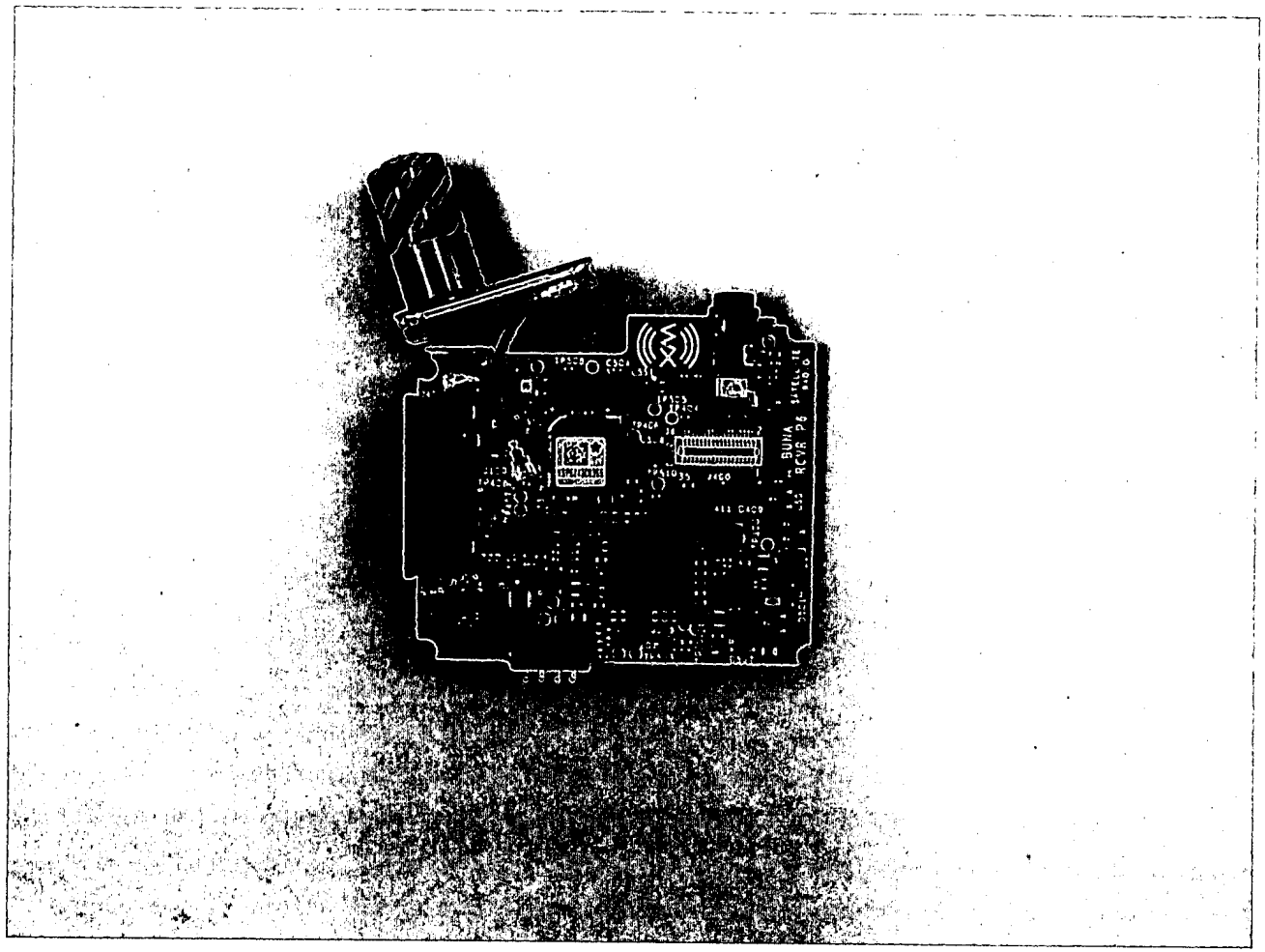
Controller Board - Front



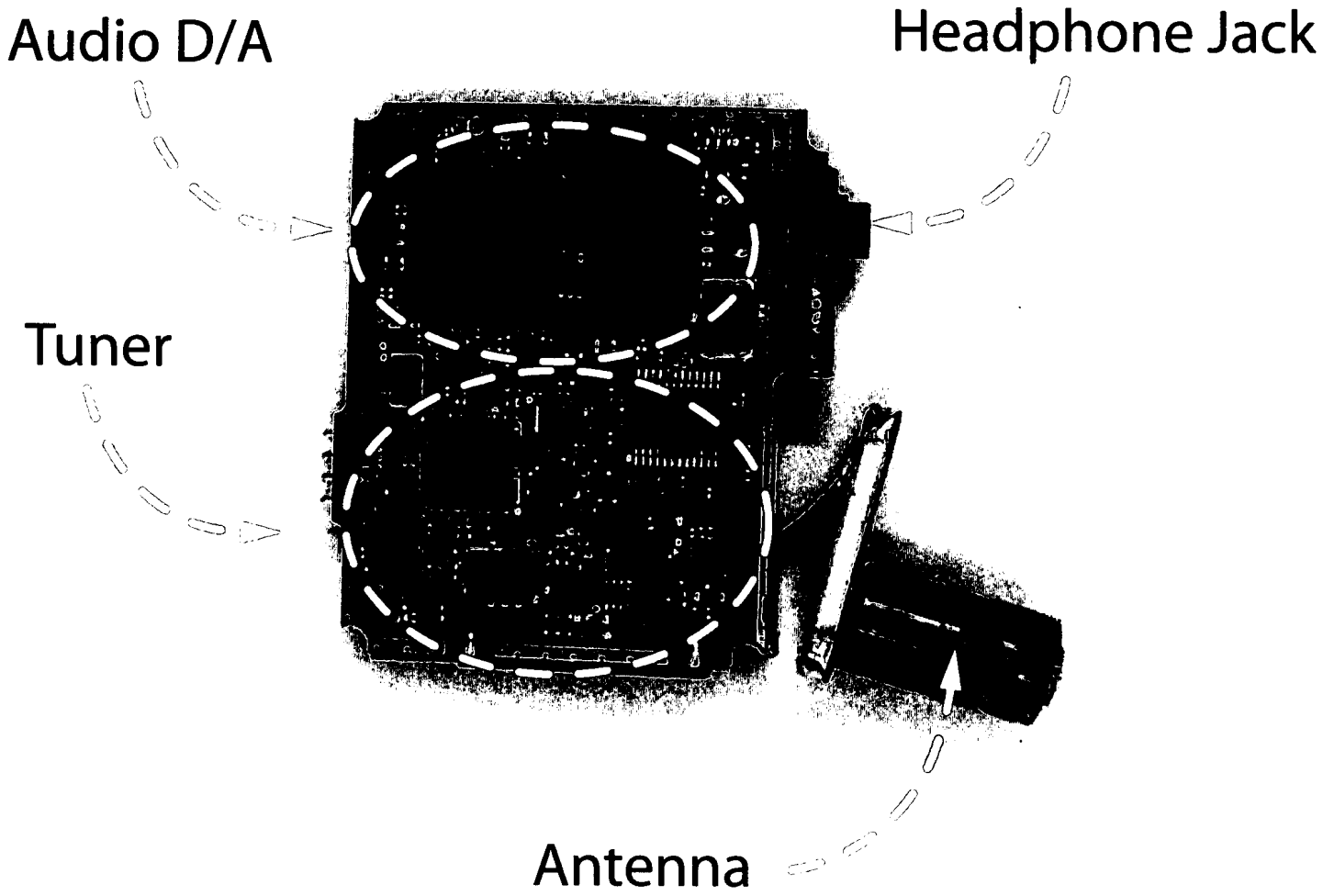
Controller Board - Back



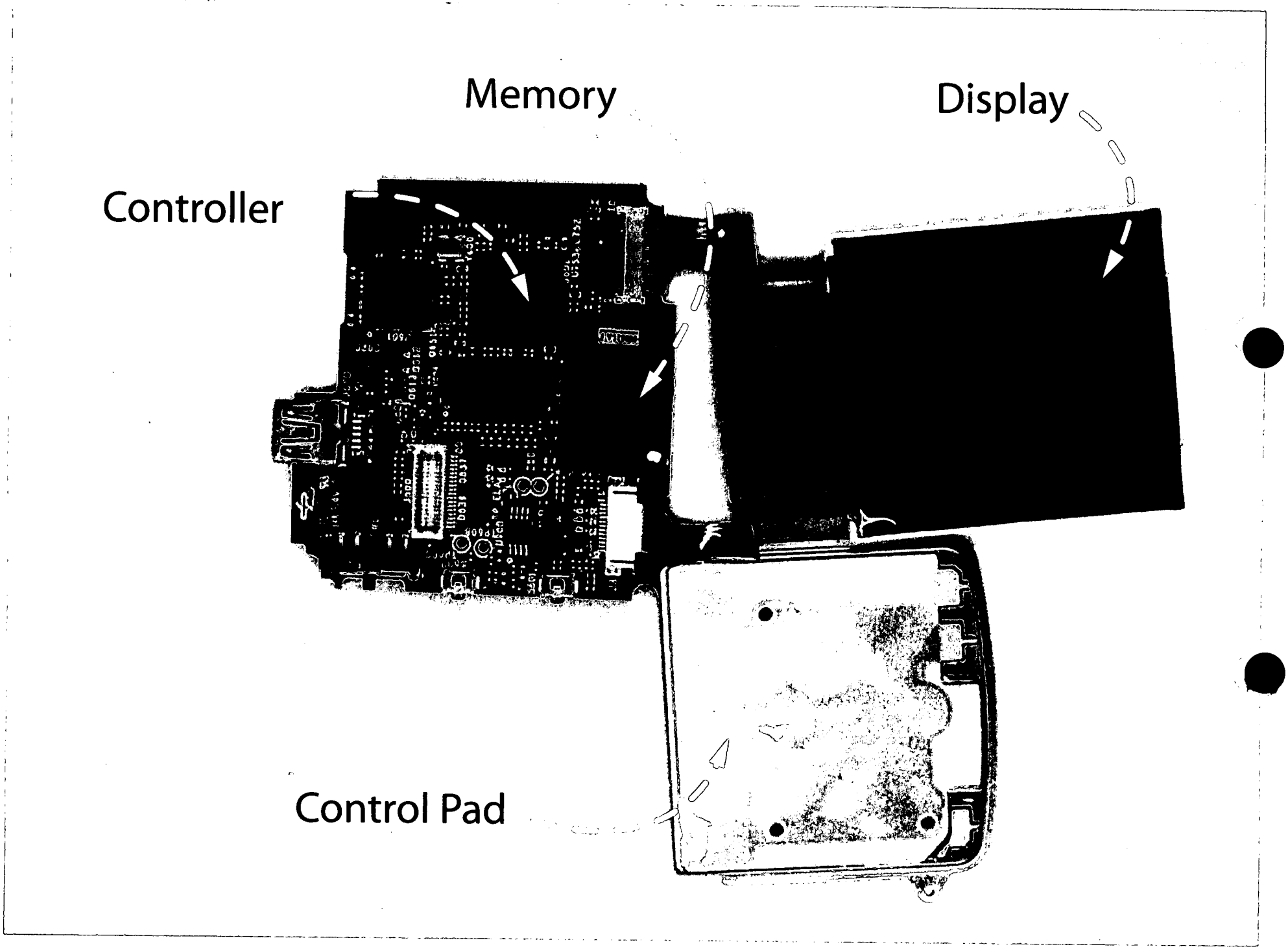
Receiver Board - Front



Receiver Board - Back



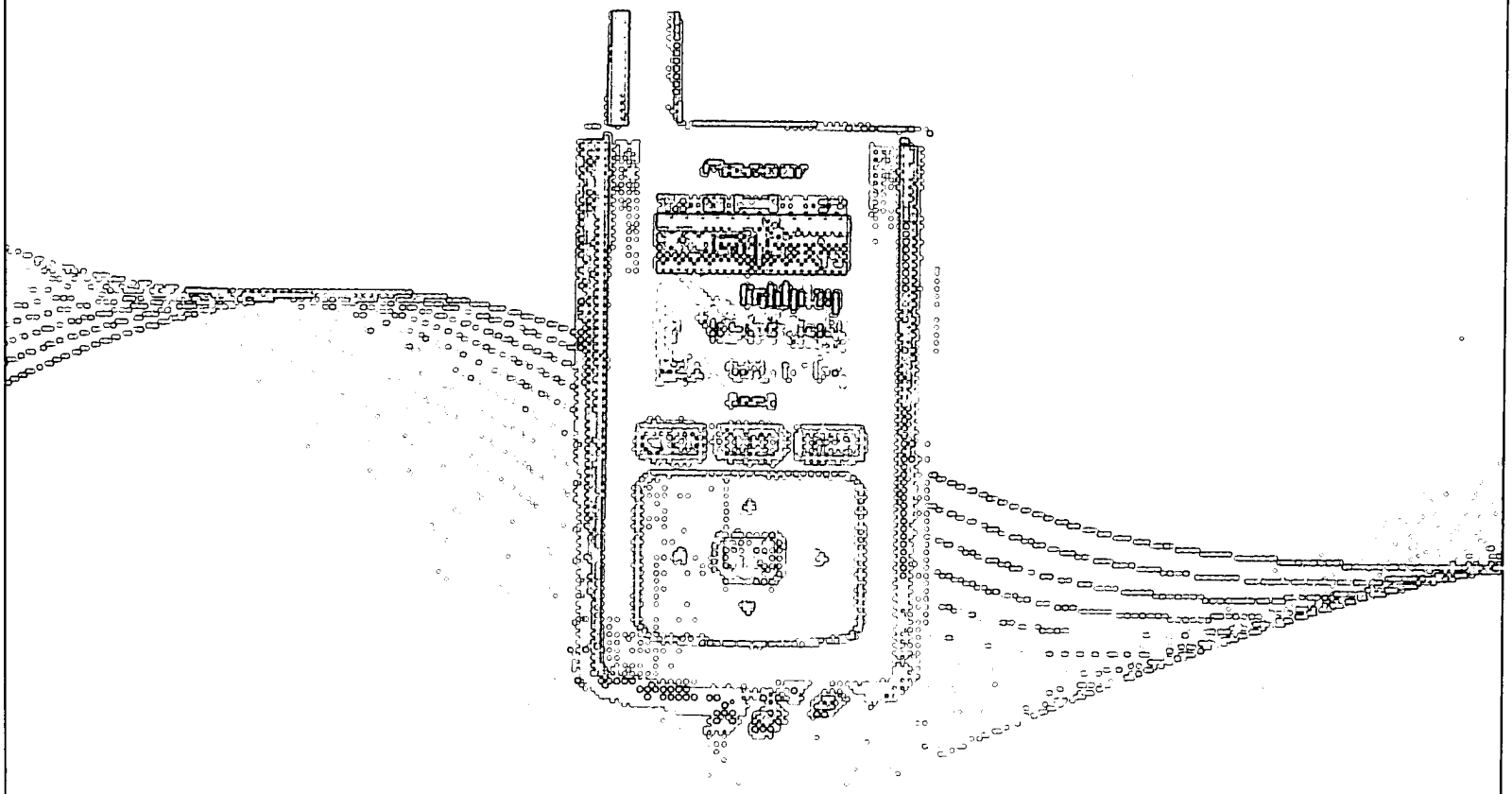
XM2go50 Receiver Board - Front



XM2go50 Controller Board - Front

Pioneer

inno™

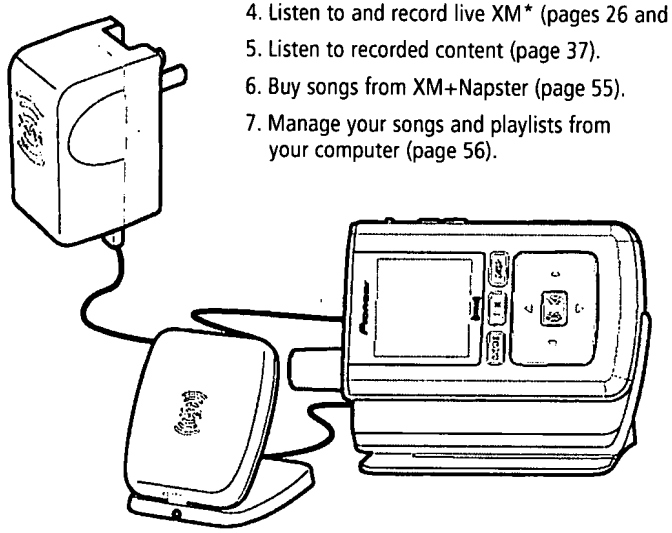


user guide

[illegible]

Quick Start

1. Charge battery for at least 8 hours (page 12).
2. Set up your inno™ (page 20).
3. Activate your XM subscription (page 18).
4. Listen to and record live XM* (pages 26 and 33).
5. Listen to recorded content (page 37).
6. Buy songs from XM+Napster (page 55).
7. Manage your songs and playlists from your computer (page 56).



*Hardware and required monthly subscription sold separately. Recorded music not for use in commercial establishments. Installation cost and other fees and taxes, including a one-time activation fee may apply. Subscription fee is consumer only. XM products, programming, services, and fees are subject to change, at any time, without notice. Channels with frequent explicit language are indicated with an XL. Channel blocking is available for XM radio receivers by calling 1-800-XM-RADIO. Subscriptions subject to Customer Agreement available at xmradio.com. XM service only available in the 48 contiguous United States. ©2006 XM Satellite Radio Inc. All rights reserved.

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ENG

Features

Congratulations on your purchase of the Pioneer inno™. It's the next-generation XM2go® radio, with an XM receiver, built-in antenna, and storage for XM, MP3, or WMA music files in one portable device.

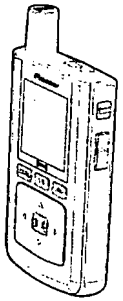
Enjoy XM's 170 channels from coast to coast, with over 80,000 hours of entertainment each month. XM offers musical choice, variety, and discovery – worlds beyond your own collection – plus a wide range of news, sports, talk, comedy, kids, and entertainment channels. Hear XM live, or save XM programming on your inno to listen at your leisure.

We've also teamed up with Napster, a leading provider of online music. Imagine discovering a new artist on XM and then, with just a few clicks of a mouse, buying high-fidelity tracks and albums by that artist and similar artists. It's that simple.

Manage all your music – XM tracks, songs you purchase from Napster, and MP3/WMA files you rip from your CDs – with the easy-to-use XM+Napster program on your Microsoft® Windows® PC.

One device, all the music you could ever hope for, and the easiest way to find the music you want – now that's a music experience!

We recommend that you read the entire manual before using your inno.

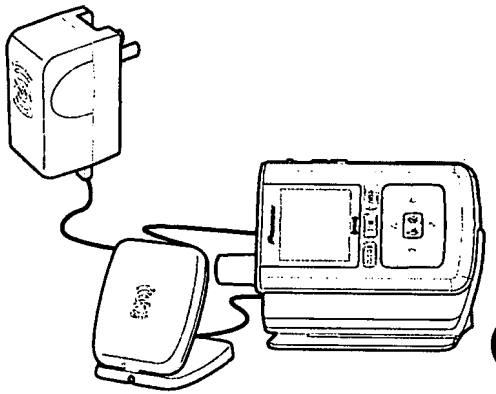


inno™ Undocked

- Listen to live and recorded XM* content
- Play MP3 and WMA files
- Manage your tracks, favorite channels, and playlists
- Listen on the go

inno + Dock + Antenna

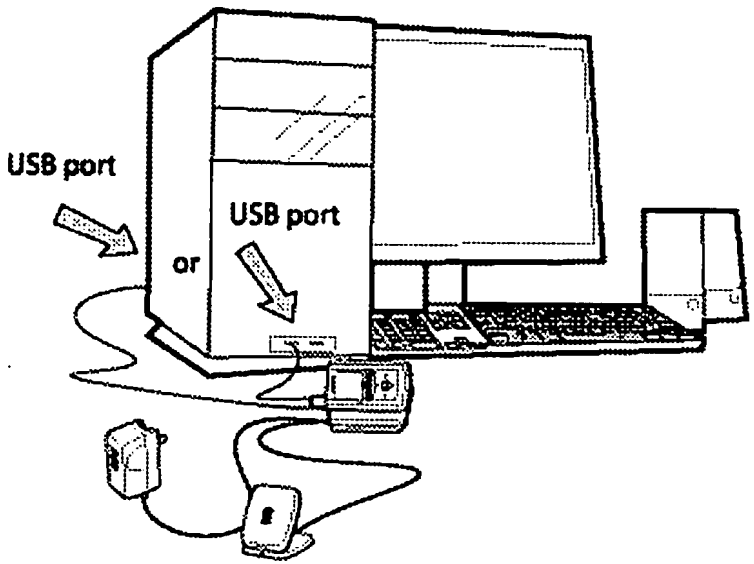
- Listen to live and recorded XM* content
- Play MP3 and WMA files
- Manage your tracks, favorite channels, and playlists
- Listen in your car or home



*Hardware and required monthly subscription sold separately. Recorded music not for use in commercial establishments. Installation cost and other fees and taxes, including a one-time activation fee may apply. Subscription fee is consumer only. XM products, programming, services, and fees are subject to change, at any time, without notice. Channels with frequent explicit language are indicated with an XL. Channel blocking is available for XM radio receivers by calling 1-800-XM-RADIO. Subscriptions subject to Customer Agreement available at xmradio.com. XM service only available in the 48 contiguous United States. ©2006 XM Satellite Radio Inc. All rights reserved.

inno + Dock + Antenna + PC

- Manage content using inno or your PC
- Listen to XM Radio Online
- Purchase music from XM+Napster and upload it to your inno



ENG

Safety Instructions

Please read and understand all the instructions to avoid injury to yourself and/or damage to your inno. Please be aware that Pioneer claims no responsibility for damage from data loss due to breakdown, repair, or other causes.

inno Digital Audio Player

- Do not expose to extreme temperatures (above 140°F or below -4°F, or above 60°C or below -20°C).
- Do not expose to moisture. Do not use inno near or in water.
- Do not let any foreign matter spill into inno.
- Do not expose to chemicals such as benzene and thinners. Do not use liquid or aerosol cleaners. Clean with a soft damp cloth only.
- Do not expose to direct sunlight, fire, flame or other heat sources for a prolonged period.
- Do not try to disassemble and/or repair inno yourself.
- Do not drop your inno or subject it to severe impact.
- Do not place heavy objects on inno.
- Do not subject inno to excessive pressure.
- Do not touch the inno with wet hands.
- Do not store in dusty areas.

⚠ **WARNING:** Handling the cord on this product or cords associated with accessories sold with the product will expose you to lead, a chemical known to the State of California and other governmental entities to cause cancer and birth defects or other reproductive harm. ***Wash hands after handling.***

Battery Charger Safety

Caution: Opening the case may result in electric shock.
Caution: The uninsulated parts inside the power adapter and dock may cause electric shock or fire. For your safety, please do not open these components. Do not let metallic objects, such as necklaces or coins, come into contact with the power adapter plugs or battery terminal.
Caution: To avoid electric shock, use the power adapter only with an outlet that matches the shape of the adapter's plug.
Caution: Make sure that you insert the adapter's plug all the way into the outlet.
Caution: Do not plug several devices into the same electrical outlet.
Important: Always read and understand the user guide to prevent problems.
Warning: Use the power adapter and dock away from water sources to avoid fire or electric shock.

Environmental Information

- Follow local guidelines for waste disposal when discarding packaging, batteries, and electronic appliances.
- Your player is packaged with cardboard, polyethylene, etc., and does not contain any unnecessary materials.

Earbuds and Headphones

- Follow traffic safety instructions.
- Do not use earbuds or headphones while operating a bicycle, automobile, or motorcycle. Not only is it dangerous, it may be prohibited by law in some areas.
- For your safety, make sure the earbud or headphone cable does not get in the way of your arm or other surrounding objects while you're walking or exercising.

Protect Your Ears

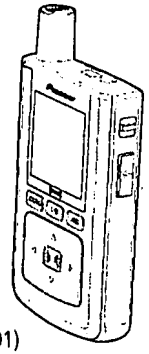
- Maintain a moderate volume when walking or exercising, so that you can be aware of what is happening around you.
- Using earbuds or headphones for an extended time can cause serious damage to your hearing.
- We strongly advise you to set the volume level to medium, which is usually less than 2/3 of the maximum.
- If you hear ringing in your ear(s), lower the volume or stop using the earbuds or headphones.

Sound can be deceiving. Over time your hearing "comfort level" adapts to higher volumes of sound. So what sounds "normal" can actually be loud and harmful to your hearing. Set your equipment at a safe level BEFORE your hearing adapts.
To establish a safer level: Start your volume control at a low setting; Slowly increase the sound until you can hear it comfortably and clearly, without distortion.
Once you have established a comfortable sound level: Set the dial and leave it there; taking a minute to do this now will help to preserve hearing.

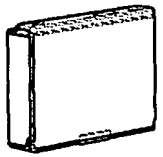
Pioneer and the Consumer Electronics Association recommend you avoid prolonged exposure to excessive noise. Under constant exposure such as sustained listening, sound levels above 85 decibels can be dangerous without hearing protection. (For reference, a garbage disposal or loud shouting at 3 feet away are around 80 decibels; a food blender or gas lawn mower at 3 feet away are around 90 decibels.) The longer your exposure and/or higher the sound level, the greater the danger of permanent hearing damage. Pioneer disclaims all liability for hearing loss, bodily injury or property damage as a result of use or misuse of this product.

⚠ **WARNING:** inno should be placed in your vehicle where it will not interfere with the function of safety features, e.g., deployment of airbags. Failure to correctly place inno may result in injury to you or others if the unit becomes detached during an accident and/or obstructs the deployment of an airbag.

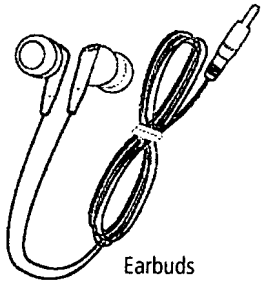
What's in the Box



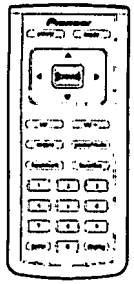
inno
(GEX-INNO1)



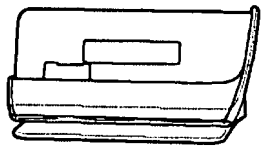
Battery



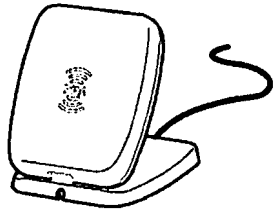
Earbuds



Remote



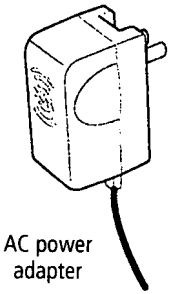
Home dock



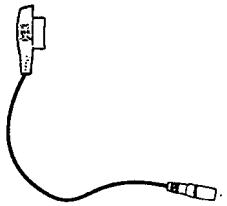
Home XM antenna

Introduction

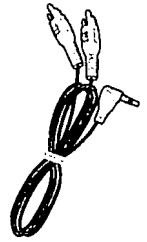
What's in the Box



AC power
adapter

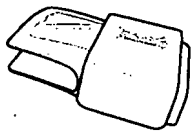


Travel power
cable



RCA audio cable

USB cable



Carrying
case/holster

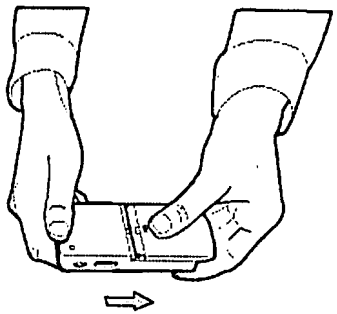
Also included:

User guide

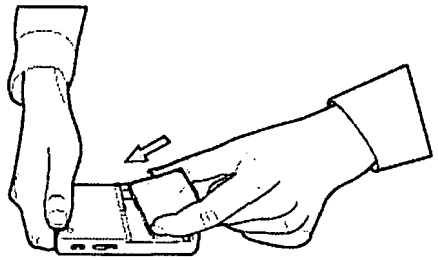
XM+Napster install CD

Charging the Battery

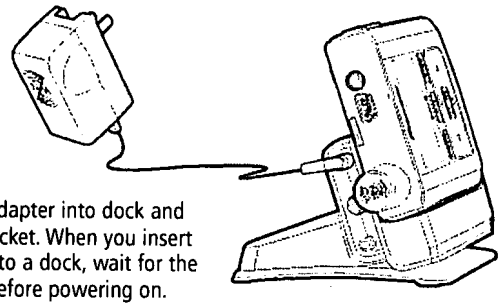
Charge the battery for at least 8 hours before using inno for the first time, or if you have not used it for several months. Be sure to charge the battery in a place where the temperature is between 32°F and 113°F (0°C to 45°C).



1. Open battery compartment.



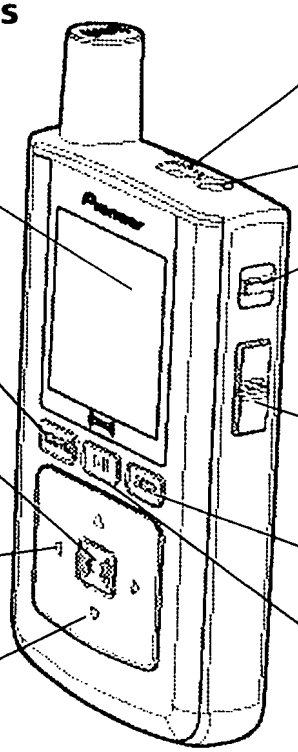
2. Insert battery into player.



3. Plug adapter into dock and wall socket. When you insert inno into a dock, wait for the beep before powering on.

ENG

inno Controls



Display

Mode – Switch between "Live XM" or "My Music" (recorded content).

XM button – Start here; press to access channels, playlists, menus, and confirm selections.

Left arrow button – Pressing the left arrow button allows you to "back out" of or exit most menus.

Arrow buttons – Select menu entries, change channels.

USB jack

Earbud jack

Power button – Slide down to turn power on or off. Slide up to "hold" controls, preventing you from accidentally pressing a button.

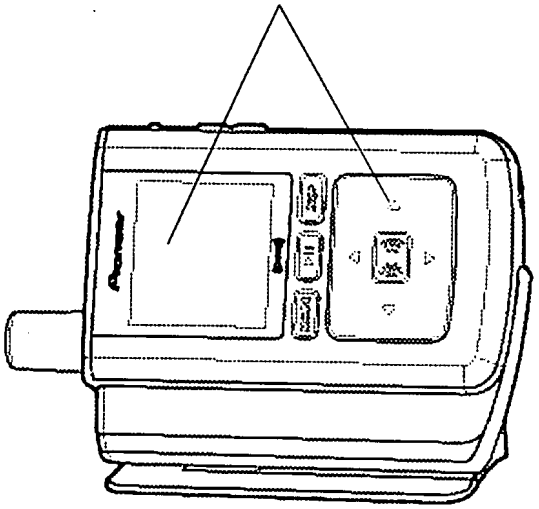
Volume

Display button – Change what's showing on the display.

Play/Pause

inno Controls

When you put inno in its home dock, both the display and arrow buttons rotate by 90° so that "up" really points up!



ENG

Using This Guide

Throughout this guide, you will see instructions such as "Select **XM** → **Settings** → **Setup** → **Antenna Aiming**." This tells you to perform the following actions:

1. Press the **XM** button.
2. You will see a menu whose last option is "Settings." Press the down arrow button several times to highlight "Settings," then press the **XM** button to select it.
3. You will see another menu whose third option is "Setup." Again, press the down arrow button to highlight "Setup," and press the **XM** button to select it.
4. You will see another menu; one of the options is "Antenna Aiming." Press the down arrow button to highlight "Antenna Aiming," and the **XM** button to select it.

Not all of the menu items described in this guide may appear on your inno display. For example, if you have not created any playlists, you will not see "Playlists" if you press the **XM** button while listening to "My Music."

✍ **NOTE:** In most instances, pressing the left arrow button allows you to "back out" of any menu.

inno Display

Available memory or signal strength – Green portion indicates amount of storage taken up by locked XM songs (page 40). In "Live XM" mode, you will see a signal strength indicator instead.

Indicates XM channel, playlist, or MP3 genre.

Progress bar – Shows total track length and current location within a track while playing songs in "My Music."

Battery charge

Mode – (((XM))) shows you're listening to live XM. (((My Music))) shows you're listening to stored XM content or MP3/WMA tracks.

H – "H" indicates that the power switch is set in the "hold" position.

Clock

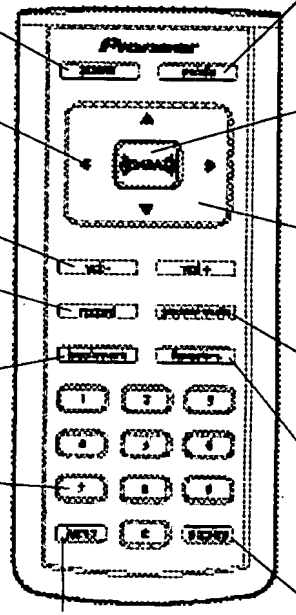
Channel number

Artist name

Song title

Additional symbols:	
play	track assigned to a playlist
reverse or fast-forward through track	PC track assigned to a playlist
pause	XM track is locked
skip to previous or next track	repeat track
PC track (MP3 or WMA file)	play tracks randomly

Remote



Power button

Left arrow button – Pressing the left arrow button allows you to "back out" of or exit most menus.

Volume

Record – Record a song or channel.

Bookmark – Tag interesting songs or tracks.

Numeric keypad – Select XM channels by channel number.

Jump – Switch to previous channel you listened to.

Mode – "Live XM" or "My Music" (recorded content).

XM button – Access menus and confirm selections.

Arrow buttons – Select menu entries, change channels.

Pause/Mute – Pause playback or mute live XM.

Favorites – Go to favorite channels.

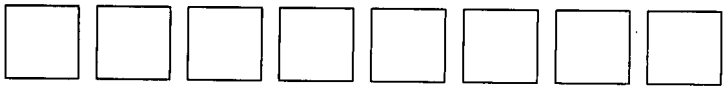
Display – Change what's showing on the display.

ENG

Subscribing to XM

Before you can listen to or record XM content, you must activate your inno.

1. Set up your inno, dock station, power adapter, and antenna (page 20 or page 22). Make sure inno can receive the XM signal.
2. Place inno in the "Live XM" mode (page 26).
3. Find the 8-character XM Radio ID, which is printed on the package or in the battery compartment underneath the battery. Or select XM channel 0 to view the Radio ID. Record the Radio ID here for reference:



The XM Radio ID does not use the letters I, O, S, or F.

4. Activate your XM Satellite Radio service online at http://activate.xmradio.com or by calling 1-800-XM-RADIO (1-800-967-2346). You will need a major credit card.

XM will send a signal from the satellites to activate the full channel lineup. Activation normally takes 10 to 15 minutes, but during peak busy periods you may need to keep your player on for up to an hour. When you can access the full channel lineup on your inno, you're finished!

Product registration

Visit us at the following site:

http://www.philipselectronics.com

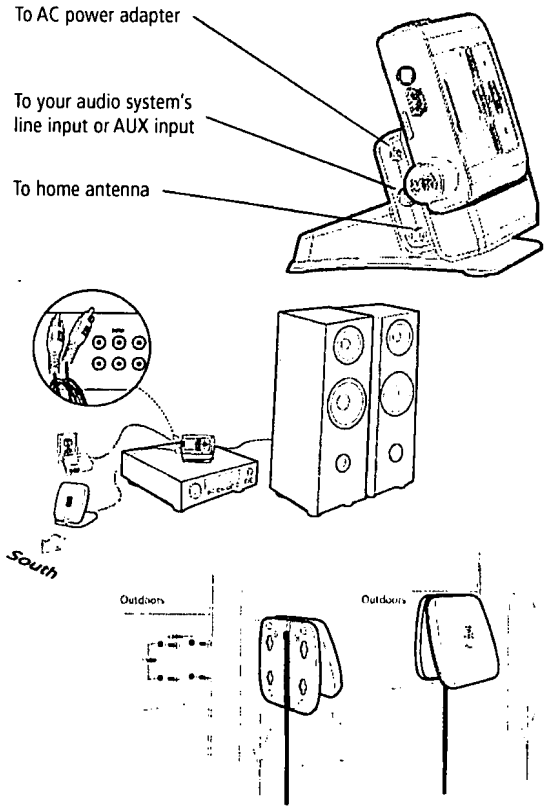
1. Register your product. We will keep the details of your purchase on file to help you refer to this information in the event of an insurance claim such as loss or theft.
2. Receive updates on the latest products and technologies.
3. Download owner's manuals, order product catalogues, research new products, and much more.

⚠ **IMPORTANT (Serial Number)** The serial number of this device is located on the back of this unit. For your own security and convenience, be sure to record this number on the enclosed warranty card.

Setup

At Home

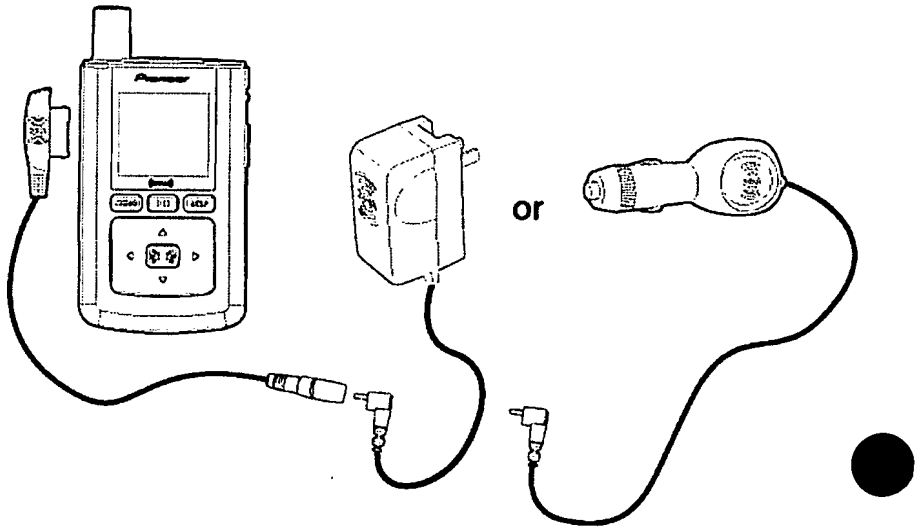
1. Insert inno into home dock.
2. Connect inno to your audio system as shown. Connect power adapter and home antenna. Point antenna toward the southern sky through a window.
3. To optimize signal reception, you may mount the home antenna outdoors, facing south. Make sure the antenna is not blocked by buildings or trees.



Using Your inno Alone

While Traveling

If you're traveling, you can connect the power adapter directly to inno using the travel power cable.



Setup

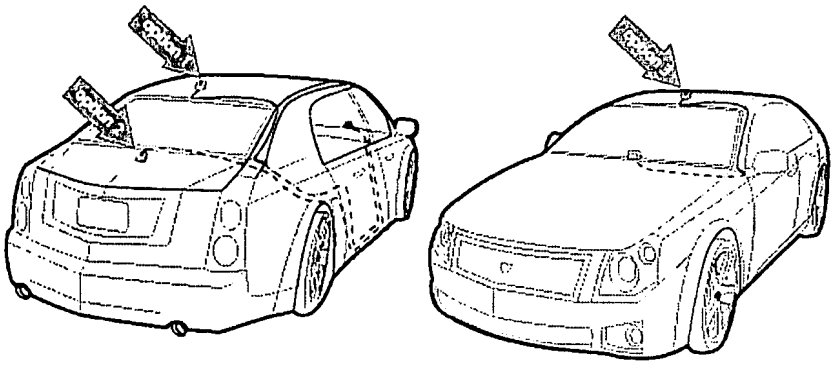
In a Vehicle

(requires Car Accessory Kit CD-INCAR1, sold separately)

Every vehicle is different; for your safety, follow all instructions carefully. Consult a professional installer if you have questions.

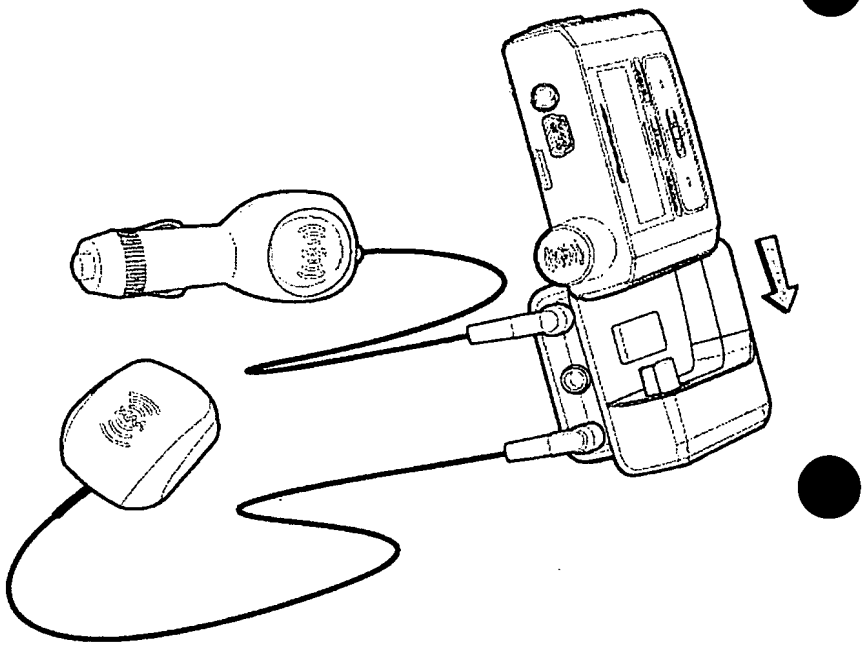
You can listen to your inno through your car stereo by using inno's built-in FM transmitter. Simply find an unused FM frequency on the stereo and set inno to transmit on that same frequency.

1. Mount antenna to the roof or trunk of the vehicle. During installation, make sure you are outdoors and the antenna is not obstructed by tall buildings.



Using Your inno Alone

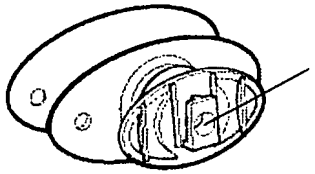
2. Insert inno into car dock.
3. Connect car dock to antenna cable and power adapter.



Using Your inno Alone

4. To install the swivel mount, first find a suitable location. The swivel mount's adhesive is very strong and may be difficult to remove. Do not install this mount on leather surfaces and make sure the air temperature is at least 60°F (15°C).

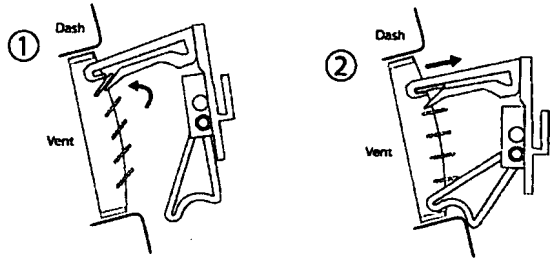
   Clean the mounting surfaces with the surface preparation kit. Peel away the adhesive liner and firmly press the swivel mount to the surface for 30 seconds. Allow 24 hours before using the mount.



You can adjust the tension of the mount with a screwdriver.

If you need to remove the mount, carefully lift the adhesive pad with your fingers or a spoon. Warming with a hair dryer for several minutes will help soften the adhesive.

5. To install the vent mount, find a horizontal vent that is strong enough to hold your inno and dock. To remove the vent mount, push it into the vent and lift upwards slightly to release the mount's hooks from the vent vane.



6. Find an unused FM frequency on your car stereo.
7. Set your inno to the same FM frequency. (Refer to the section marked "Settings," "FM Frequency.")
8. Tune inno to XM channel 1. You should be able to hear XM through your car stereo.

ENG

Using Your inno Alone

Live XM

> ✍ **NOTE:** You must receive a live XM signal for at least 8 hours a month (which may be split over several listening sessions). This authenticates your XM subscription and ensures that you can continue to enjoy your recorded XM content and live XM programming. If you do not dock your inno as described, you will lose access to your recorded content and live XM programming.

Turn on your inno. Subscribe to XM (page 18) if you haven't done so already.

If you see "XM" at the top of the display, you're listening to XM content that is currently being broadcast from the satellites.

If you see "My Music" on the display, you're listening to recorded XM or MP3/WMA tracks. Press the **Mode** button to switch to "Live XM."

Selecting Channels

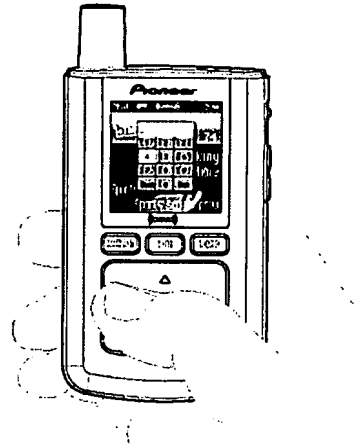
Press the up or down arrow buttons to scroll through the list of channels.

- OR –

Press the number keys on the remote that correspond to the channel number.

- OR –

1. Press the left arrow button on your inno. You will see a virtual keypad on the display.
2. Use the arrow buttons to select the digits corresponding to the channel number. Press the **XM** button after highlighting each digit.
3. When you've entered a valid channel number, your inno will tune to that channel within 2 seconds.



ENG

Using Your inno Alone

Favorite Channels

You can save your favorite channels in an easily accessible list.

1. While you're tuned to a channel, press the **XM** button.
2. Select **Favorites → Add Channel.**
3. Once you've saved your favorites, you can quickly access the list. From the "Live XM" screen, simply press the right arrow button to see your "Favorites" list. Press the up and down arrow buttons, then the **XM** button to select the desired channel.
4. To remove a channel from the "Favorites" list, select **XM → Favorites → Edit Channels → (channel name) → Remove Channel.**

Categories

XM channels are organized into categories, or genres, such as "Rock," "Jazz," or "News."

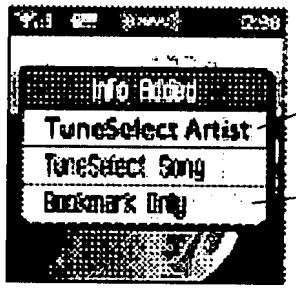
To find a channel by category:

1. Press the right arrow button one or more times. The category name appears in the display. "Favorites" is your first category if you have designated any channel as a "favorite channel."
2. When you've found the category you want, press the up or down arrow buttons to select a channel.
3. Press the **XM** button to tune to that channel.

TuneSelect™

TuneSelect™ finds your favorite artist or song whenever they're currently being played on any XM channel.

1. When you hear one of your favorite songs, select **XM → Bookmark.**
2. You should see the following menu:



Select either "TuneSelect Artist" or "TuneSelect Song" to add the artist or song to your TuneSelect list.

What's a "bookmark"? See page 45.

3. When any song or artist on your TuneSelect list is currently playing on any other XM channel, inno will beep and flash "Artist/Song Found" on the display. Switch to that channel by pressing the **XM** button.
4. To edit the TuneSelect list, select **XM → Settings → Preferences → TuneSelect → Edit List.** Choose song or artist and follow the directions on the display.
5. To turn TuneSelect on or off, select **XM → Settings → Preferences → TuneSelect → Alert** and choose the desired setting.

TuneSelect also allows you to type an artist name or song title even if the song isn't currently playing on your inno.

1. Select **XM → Settings → Preferences → TuneSelect → Edit List → Add TuneSelect.**
2. Press the up or down arrow buttons to choose the artist or song title field.
3. Press the **XM** button. You will see a virtual keyboard. Type in the artist name or song title.
4. Select "Enter" when you're finished, or select "Exit" to cancel.
5. Select "Accept" to add that name or title to your TuneSelect list. You can also select "Change" or "Cancel."

> ✍ **NOTE:** The artist name and song title fields are case-sensitive.

Using Your inno Alone

Info Extras

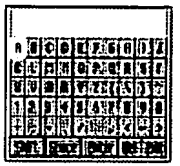
XM Satellite Radio broadcasts information such as sports scores, stocks, and other features from time to time.

To Choose Sports or Teams:

1. Select **XM → Settings → Preferences → Info Extras → Sports.**
2. Use the arrow buttons to highlight (in yellow) a sport or team.
3. Press the **XM** button to select that sport or team. The name of the sport or team will turn green.
4. You may select more than one sport or team to display. Your chosen selections are shown in blue. To remove a selection, go to that entry and press the **XM** button; the entry will change color from blue to gray.
5. When you're finished, press the left arrow button repeatedly until you return to the normal display. Or just wait several seconds for inno to return to its home screen automatically.

To Select Stocks*:

1. Press **XM → Settings → Preferences → Info Extras → Stock Ticker → Add Stocks.**
2. You should see a virtual keyboard that will allow you to enter a stock symbol.
3. Use the arrow buttons to highlight the first letter in the stock symbol. Choose that letter by pressing the **XM** button.



*Quotes are provided by ComStock, Inc. and cover most stocks listed on the NYSE, AMEX, or NASDAQ. Market information is delayed by approximately 25 minutes.

4. Continue selecting letters by using the arrow and **XM** buttons.
5. Select "Enter" when you've entered the entire stock symbol. Your inno is smart enough to automatically complete some stock symbols.
6. You can track up to 20 stock symbols. When you've entered all your desired stock symbols, select "Exit."
7. Press the left arrow button repeatedly (or simply wait a few seconds) until your inno returns to normal operation.

To display Info Extras, press the **Display** button several times until you see sports scores or a stock ticker at the bottom of the display.

ENG

Recording XM

Your inno enables you to record XM content for personal, non-commercial use. You may record XM content while listening to live XM or by scheduling a recording session. You can then listen to recorded XM content on the go. You can also personalize your XM content by creating playlists for every mood and occasion.*

Recording a Single Song

1. While you're listening to live XM, select **XM → Record → Record Song**. Don't worry if you miss the beginning of the song; your inno captures the entire song even if you start up to 10 minutes after the song begins, as long as you're already tuned to that channel.

   By selecting "Record Song," you instruct your inno to stop recording at the end of the song.
2. You can continue recording the channel you're listening to by selecting **XM → Record → Rec Channel**.
3. To stop recording at any time, select **XM → Record → Stop Recording**. If you change channels, inno automatically stops recording.

SHORTCUT: To immediately start recording at any time, press and hold the **XM** button until you see the "Recording ..." message appear on the display.

*XM content cannot be exported from the inno digital audio player. If you wish to own a complete, high-fidelity version of digital content on demand, you should purchase content from XM+Napster. This may allow you to store the content on multiple devices depending upon the digital rights management of such content.

Using Your inno Alone

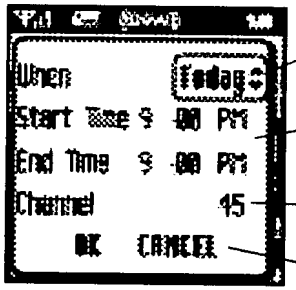
Recording a Channel

1. While you're listening to live XM, select **XM → Record → Rec Channel**. You will record the channel you're currently listening to.
2. To stop recording at any time, select **XM → Record → Stop Recording**. If you change channels, inno automatically stops recording.
3. You can choose to stop recording at the end of the song you're currently listening to by selecting **XM → Record → Record Song**.

Scheduling a Recording Session

You can set inno to record XM at a later time. When you schedule a recording session, remember that inno must be able to receive a live XM signal when the session begins.

1. To schedule a recording session, select **XM → Record → Schedule Rec → New Session**.
2. The "Scheduled Rec" display allows you to set various options. Use the up and down arrow buttons to adjust each entry. Press the left or right arrow buttons to move to the previous or next option.



You can choose to schedule a session for "Today," "Everyday," or a specific "Date."

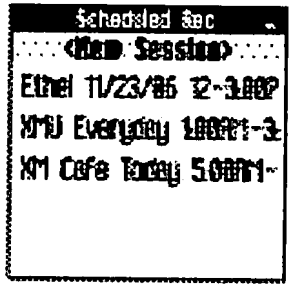
Set start and stop times using the up and down arrow buttons. If the session length exceeds the available memory, you will record over the oldest XM tracks in the memory, so you'll always have the latest content.

Choose the channel you want recorded. You can enter the channel number using the remote's numeric keys.

Choose "OK" to save the session or "CANCEL" to start over.

inno informs you if there is a scheduling conflict such as overlapping sessions.

3. To edit an existing session, select **XM → Record → Schedule Recording**. You will see a list of sessions. Highlight the session you wish to edit.



You may not see all the sessions that you scheduled in the past. Sessions that have expired are automatically removed from the list.

4. Choose **Edit Session** to change the session's options.

5. To delete a session, choose **Cancel Session**.

At the scheduled time, your recording session will begin and change channels if needed. Remember that when you schedule a recording session, you are instructing inno to switch to the desired channel.

> ✍ **NOTE:** Scheduled recording sessions will begin only if inno is put in a home dock or in a boombox with AC power. Your inno can be powered off or on. Make sure your inno can receive a strong XM signal!

Using Your inno Alone

ENG

Listening to Recorded XM Content (My Music)

When you see "My Music" at the top of the display, you're listening to XM content that you have recorded and any MP3/WMA files you have transferred to your inno.

1. To switch to "My Music" from "Live XM," press the **Mode** button.
2. Press the up and down arrow buttons to view a list of songs that you have stored on inno. Highlight the song you want to listen to, then press **XM → Play** to start playing from that song.
3. You can press the right arrow button to skip to the next song. Press the left arrow button to skip to the previous song.
4. While you're listening to a song, you can also press and hold the right arrow button to fast-forward through that song. Press and hold the left arrow button to reverse through the song.

> ✍ **NOTE:** In order to access your XM content you have recorded on inno, you must (1) maintain an active XM Satellite Radio subscription, and (2) receive the live XM signal at least 8 hours a month.

Organizing Your Music

Finding Your Music

All songs and tracks that are stored in your inno are normally played in the order that they were recorded or transferred into your inno. You can also sort the selections by artist, category, or channel.

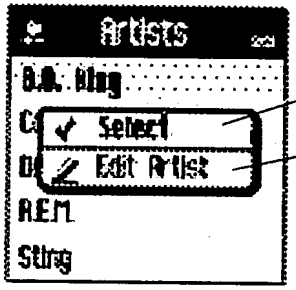
1. While listening to recorded tracks in "My Music," select **XM → Find**.
2. Choose how to view your stored music. For example, to sort your stored music by artist, select **Artists**.

View all songs on your inno.

You can also sort songs by artists, by categories, by channels, or by recording sessions.

3. Press the up or down arrow buttons to scroll through the list of artists. Press the **XM** button to select an artist.

Using Your inno Alone



Shows the artist's songs in the order they were recorded.

Opens the Edit window, allowing you to add an artist to a playlist, lock or unlock all the artist's songs, or delete all the artist's songs.

4. Once you've selected an artist, you will see a list of songs by that artist that you have recorded.
5. Select the song you want to hear using the arrow and **XM** buttons. Select **XM → Play** to begin playing that song.
6. To return to the list of artists, press **XM → Find → Artists** and select another artist as in steps 3 and 4.
7. You can also sort your tracks by categories or by channels. WMA and MP3 songs show the category or genre that they are assigned to using their ID3 tags, which may or may not be the same as the XM category. WMA and MP3 songs are also assigned to a channel named "MP3/WMA."
8. To view all the songs stored in your inno, press **XM → Find → All Songs**.

SHORTCUT: As soon as you've highlighted a song, simply press the right arrow button to start playback.

Using Your inno Alone

Locking and Unlocking XM Content

When you record XM, your inno records over the oldest XM tracks first. This ensures that you always hear the latest XM content. You can "lock" a song or track to prevent inno from recording over it. Locked songs occupy memory on your inno and reduce your available recording time. Remember that you can buy high-fidelity songs or albums from XM+Napster that can be stored either on your inno or on your PC.

1. While you're listening to a song in "My Music," press the up or down arrow buttons to view the list of songs.
2. Highlight the song you want to lock.
3. Select **XM → Edit Song → Lock Song**.
4. The locked song is indicated with a padlock symbol to the left of the song title.
5. To unlock a song, highlight the song in the list and select **XM → Edit Song → Unlock Song**.

SHORTCUT: To lock the song you're currently listening to, press and hold the **XM** button, then select **Lock Song.**

You can also lock all songs by an artist, in a category, or in a channel. To lock all songs by an artist:

1. Select **XM → Organize → Artists → (artist name) → Lock Artist**.
2. All songs by this artist are displayed with a padlock symbol to the left of the song title.

If you add a song to a playlist, that song is automatically locked.

Playlists – Adding Songs

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You can create one or more custom lists, called playlists. Each playlist is an index of songs that play in a certain order. You can create a "morning drive" playlist, a "workout" playlist, a "best of" playlist, and more.

1. To add a song to a playlist, first select a song using the up or down arrow buttons. The song may be a recorded XM track, an MP3 track, or a WMA track, including songs purchased through XM+Napster.
2. Select **XM → Edit Song → Add to Playlist**.
3. You can choose to add the song to an existing playlist or to create a new playlist. To choose an existing playlist, simply highlight and select the playlist name. To create a new playlist, choose **New Playlist** and use the virtual keyboard to name that playlist.
4. The display confirms by showing "(playlist name) (song title) Added."
5. Adding a song to a playlist automatically locks that song.

SHORTCUT: When you're in "My Music," you can add the recorded XM song that you're currently hearing to a playlist by pressing and holding the **XM** button, then selecting **Add to Playlist**.

You can add a song to more than one playlist or a song to the same playlist more than once.

You can also add all songs by an artist to a playlist: select **XM → Organize → Artists → (artist name) → Add to Playlist**. You can also add all songs in a particular XM channel or category to a playlist.

Using Your inno Alone

Playlists – Removing Entries

You can remove entries from a playlist. Remember that removing a song from one playlist does not remove it from any other playlist, and does not delete that song from inno.

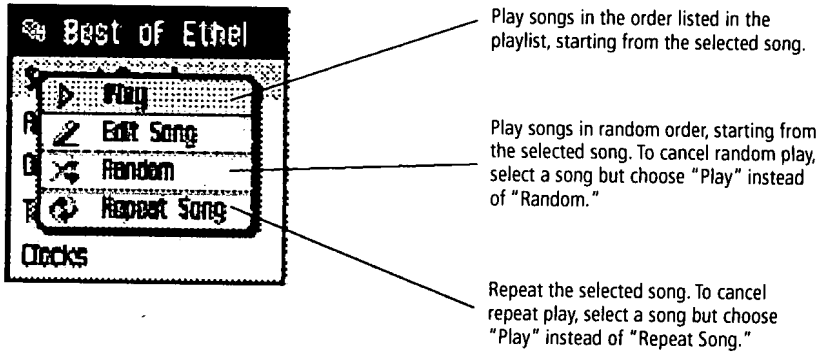
To remove one or more songs from a playlist:

1. Select **XM → Playlists → (playlist name) → Edit Playlist → Remove Songs.**
2. Use the up and down arrow buttons to highlight a song.
3. Press **XM → Select.** The song's name will change to green.
4. Use the up and down arrow buttons to highlight another song, and press the **XM** button to select that song. Do this for all the songs you want to remove; these songs are displayed in blue.
5. Select **XM → Remove Song(s) → Yes.**
6. inno confirms by displaying "Songs Removed."

SHORTCUT: Instead of steps 3 and 4, press the right arrow button to select the song you want to remove.

Playlists – Playing

1. Select **XM → Playlists → (playlist name) → Select.**
2. Choose a song you want to hear and press the **XM** button.
3. You will see the following options:



4. To exit a playlist and return to all songs, select **XM → Find → All Songs.**

ENG

Using Your inno Alone

Playlists – Other Options

Normally, the songs in a playlist appear in the order that they were added.

To rearrange the songs in a playlist:

1. Select **XM → Playlists → (playlist name) → Edit Playlist → Arrange Songs**.
2. Use the up and down arrow buttons to highlight a song.
3. "Pick up" that song by pressing the **XM** button. The song title changes to green.
4. Move the song using the up and down arrow buttons.
5. "Put down" the song by pressing the **XM** button. The song title changes back to yellow.
6. Repeat steps 2-5 for any song you want to move. When you're finished, press the left arrow button repeatedly until you return to normal operation.

To rename a playlist:

1. Select **XM → Playlists → (playlist name) → Edit Playlist → Rename Playlist**.
2. Use the virtual keyboard to change the name of the playlist.
3. Select "Enter" when you're finished, or "Exit" if you don't want to save your changes.

✍ **NOTE:** You can also manage the playlists on your inno by using the XM+Napster application on your PC.

Bookmarking Songs

"Bookmarks" are a great way to remember interesting songs. You can view all your bookmarks through the XM+Napster application, look up information about the artist or album, o purchase a complete, high-fidelity version of the song that you may play on multiple devices through XM+Napster. You may also purchase songs by the same artist (or similar artists) through XM+Napster.

ENG

To bookmark a song in "My Music":

1. Press the up or down arrow buttons until you highlight the song you want to bookmark.
2. Press **XM → Edit Song → Bookmark Song**.
3. inno confirms by displaying "Info Added."

SHORTCUT: To bookmark the song that you're currently listening to in "My Music," press and hold the XM button, then select **Bookmark Song**. You can only bookmark live or recorded XM tracks, not MP3 or WMA tracks.

To bookmark a song in "Live XM":

1. Select **XM → Bookmark → Bookmark Only**.
2. inno confirms by displaying "Info Added."

Using Your inno Alone

Deleting Songs

When you're no longer interested in a song or track, you can delete it from your inno. "Deleting" a song permanently erases it from memory, and is different from "removing" a song from a playlist.

To delete one song from "My Music":

1. Press the up or down arrow buttons until you highlight the song you want to delete.
2. Select **XM → Edit Song → Delete → Yes**.
3. inno confirms the song is erased by displaying "Song Deleted."

SHORTCUT: To delete the song that you're currently listening to, press and hold the XM button, then select **Delete**.

To delete multiple songs from "My Music":

1. Select **XM → Organize → Songs**.
2. Use the up and down arrow buttons to highlight a song.
3. Select **XM → Select Song**. The song's name will be displayed in green.
4. Use the up and down arrow buttons to highlight another song, and press the **XM** button to select that song. Do this for all the songs you want to remove.
5. Select **XM → Delete → Yes**.
6. inno confirms that the songs are erased by displaying "Songs Deleted."

SHORTCUT: Instead of steps 3 and 4, press the right arrow button to select the song you want to delete.

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System Requirements

The inno will not work with all computers.

The PC system must meet the following requirements:

- Intel® Pentium®- class CPU
- Microsoft Windows XP Home, Windows XP Professional, or Windows 2000 operating system*
- At least 64 MB of RAM.
- At least 13 MB of available hard disk space for XM+Napster application.
- Internet Explorer 5.1 or higher.
- Windows Media Player 9 or higher; Windows Media Player 10 recommended for Windows XP.
- Active Internet connection; we recommend a broadband (cable, DSL, or fiber) connection for optimal performance.
- inno may not work with all computers meeting these requirements depending on system configuration and user demands on existing hardware and software.

*The following operating systems are not supported: Windows 95, Windows 98, Windows NT, Windows Me, and Mac OS.

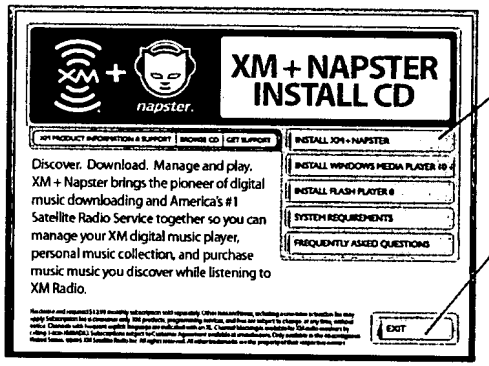
Using inno with a PC

Setup

We recommend reading this entire section before using your inno with a PC.

To connect your inno to your PC:

1. If you haven't done so already, disconnect your inno and its dock from your PC.
2. Insert the XM+Napster CD into your computer's CD or DVD drive.
3. The software should start automatically. You should see the following screen on your PC:



Click here to begin the installation.

Click here when you're finished with the installation procedure.

Follow the directions indicated on the screen. If you have any questions about the XM+Napster software, see the XM+Napster FAQs at http://napster.xmradio.com.

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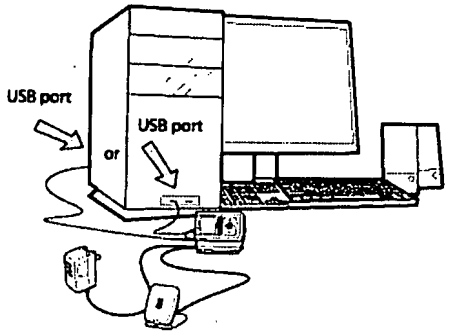
4. Reboot your PC if necessary, then launch the XM+Napster program from the shortcut on your desktop.
5. Set up inno as shown and plug the USB cable into the PC. You can also connect the USB cable directly between your PC and inno without using the home dock, home antenna, and AC power adapter.



WARNING: Only use the USB cable supplied in the package. Other USB cables may not allow your inno to charge its battery or communicate with your PC.

6. Your PC should recognize inno. Close any file folders that appear on your screen. You can manage the contents of inno entirely by using the XM+Napster program.
7. When taking your inno with you, you must disconnect inno from the PC by following the procedure described in "Disconnecting Your inno from the PC" (page 60).

Using inno with a PC

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Registering with XM+Napster

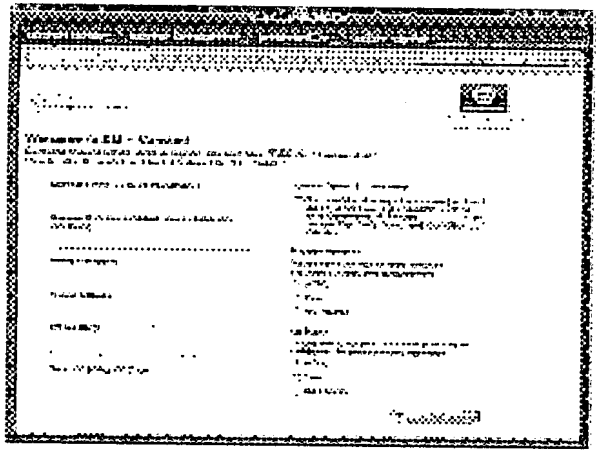
Choose either the XM+Napster Light service or the XM+Napster service. XM+Napster Light allows you to buy individual songs or albums whenever you want. XM+Napster lets you stream music to your PC for an additional monthly subscription.

	XM+Napster	XM+Napster Light
Manage XM content and MP3/WMA files on your inno	✔	✔
Transfer MP3/WMA files from your PC to your inno	✔	✔
Buy individual songs or albums to keep forever, burn to CD, and transfer onto your inno	✔	✔
Additional monthly subscription with XM+Napster required	✔	
Download and listen to all the Napster music you want on your PC	✔	
Listen to 75+ XM channels on your PC from XM Radio Online	✔	✔
Community and music discovery tools	✔	

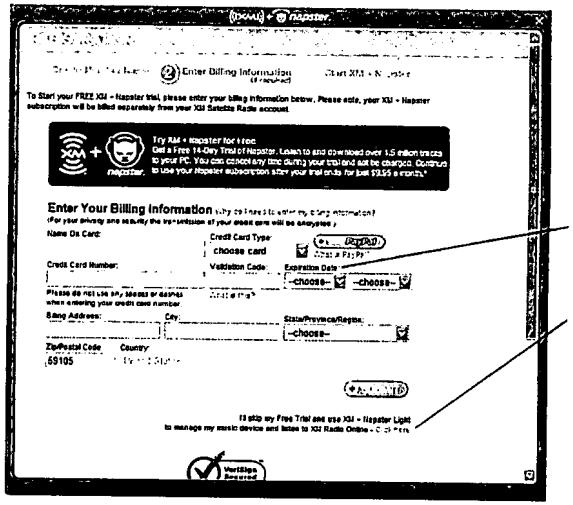
Using inno with a PC

To register, follow these steps:

1. Click **File/Sign In** on the XM+Napster application. Click on the link for new members.
2. Follow the directions indicated on the registration screen. You must provide your active XM Radio ID and billing ZIP code to register.



3. If you choose XM+Napster, you must provide a valid credit card. Registering for XM+Napster Light does not require a credit card; you only need one when you purchase individual songs or albums. Simply select "Start XM+Napster Light" instead of entering your billing information.



4. The next time you use XM+Napster, sign in with your user name and password to access the XM+Napster service. You can also use the XM+Napster software off-line, without signing in, and still retain the ability to manage your inno.

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Using inno with a PC

What Can You Do with XM+Napster?

Using XM+Napster, you can:

- Manage songs, playlists, and recording sessions on your inno.
- Transfer MP3 and WMA files between inno and your PC.
- Explore and purchase music from XM+Napster's enormous online store.
- Listen to XM Radio Online.

Exploring

Explore XM+Napster's online store and community, with over 1.5 million songs, 100,000 albums, and 80,000 artists.

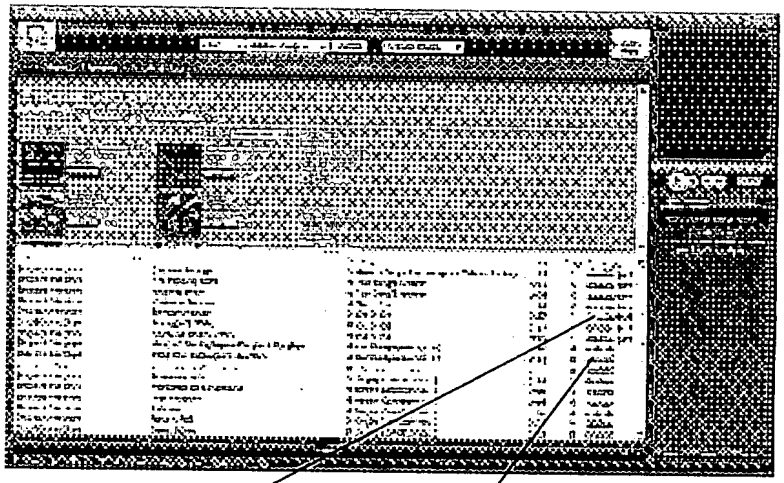
Search by entering an artist name, song title, or album.

Drag and drop tracks or albums onto the "playlist/ radio" pane to play them on your PC.

Purchasing Music

The XM+Napster store allows you to stream, download, or buy songs or albums.

- **Stream** – Listen to a song while your PC is connected to the Internet.
- **Download** – Store music on your PC. You can listen to these songs any time, even if your PC is off-line.
- **Buy** – Purchase the track or album. You can transfer these songs to your inno at any time.



"buy only" – Only available to buy or to sample a 30-second clip from XM+Napster.

"download" – Available to buy, download, or stream from XM+Napster.

ENG

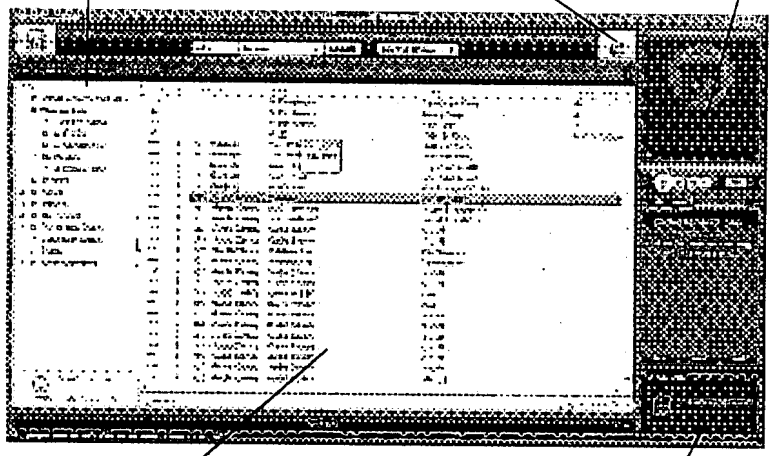
Using inno with a PC

Organizing Your Music

The "Folder" pane lets you view the tracks stored on inno or on your PC, playlists, recording sessions, bookmarks, and more. Click on the desired folder to see its contents on the main pane.

View and manage all the XM content you recorded, WMA, and MP3 tracks on your inno and your PC.

Drag and drop tracks or albums onto the "playlist/radio" pane to play them on your PC.



The main pane shows the contents of a folder.

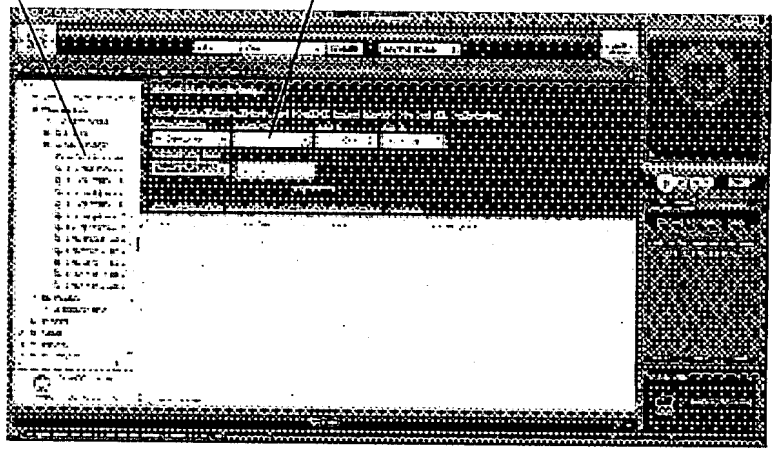
Drag and drop purchased tracks into the "transfer" pane to move them from your PC to your inno.

Recording Sessions

View and edit your inno recording sessions by selecting **Library/inno/XM Recordings** on the XM+Napster application.

Create a new recording session or choose an existing session.

Enter the options for the recording session.



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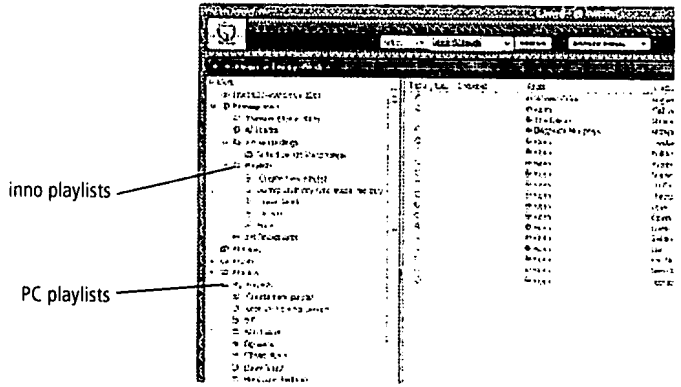
Playlists

You can manage your inno playlists using XM+Napster. Simply dock your inno, then select **Library/inno/Playlists**. You can create new playlists, or edit or delete any playlists that are stored in your inno.

You can also create and manage playlists for any music content stored on your PC. Select **Library/My Playlists**.

To add a track to any playlist, select that track on the main pane and drag it to the playlist name in the "Folder" pane. Alternatively, right-click on the track name, then select the playlist you want to add the track to.

You can move a PC playlist onto your inno by dragging that playlist name into the **Library/inno/Playlists** line. When you move tracks and playlists onto your inno, you may have to purchase that content from XM+Napster, if you have not done so already.



Transferring Between PC and inno

To transfer a track or playlist from your PC to your inno, drag and drop the track or playlist into the "transfer" pane on the lower right-hand side of the XM+Napster application.

You can only transfer songs that you have purchased from XM+Napster or songs that you have ripped from your audio CDs. inno only recognizes file names that use single-byte characters; double-byte and multi-byte character sets (Asian languages such as Chinese, Korean, or Japanese) are not supported.

WARNING: Though you can transfer non-MP3/WMA files to your inno using Windows, those files cannot be played as audio files. Furthermore, do not attempt to format the inno storage; doing so may cause damage to the device.

Disconnecting Your inno From the PC

Before you remove your inno from its dock or unplug the USB cable from the dock or the PC, you must disconnect using one of the following methods:

- In Windows: right-click on the **Safely Remove Hardware** icon , which is on the right side of the Windows taskbar. Select "USB Mass Storage Device," and click on **Stop**.
- On XM+Napster: click on the **Disconnect Device** icon disconnect device or select **File/Disconnect portable device**.

If you want to connect inno to your PC again, re-insert inno into its dock.

Using inno with a PC

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Listening to XM Radio Online (XMRO)

XM Radio Online gives you access to over 75 channels of the same amazing programming you hear on XM Satellite Radio, plus 10 select AOL Radio channels for even more choice.

To access XM Radio Online, click on **Home/Radio/XM Radio Online**. Then simply choose your desired channel from the channel list.

Save favorite channels in the preset buttons (at the top of the screen) by dragging a channel onto the desired button. Note that these presets are not the same as the "Favorite Channels" on your inno.

You can enjoy XM Radio Online anywhere you have a PC and a high-speed connection. Remember that you cannot save or transfer XMRO programming onto your inno.

Using Your CDs or MP3/WMA Files

Ripping Your CDs

Use the XM+Napster application to rip tracks from a CD into your Napster library.

1. Insert an audio CD into your PC's CD drive.
2. Click on **Library**, then click on the **CD** icon in the "Folders" pane. You will see a listing of the CD tracks in the main pane.
3. Click the **Rip** icon rip on the bottom of the main pane. By default, the tracks will be encoded into the WMA format at 128 kbps. You can change this setting by clicking **File/ Options/CD Options**.

Importing Tracks Into XM+Napster

If you have already created MP3 or WMA files in your computer, you can import them into your Napster library.

1. Click **File/Import Tracks to My Library** ...
2. Follow the directions on the screen.

Using inno with a PC

Burning CDs

Transfer MP3 and WMA files onto a recordable CD or DVD. Please note that the content recorded from XM cannot be burned onto a CD or DVD or otherwise transferred off your inno.

1. Insert a recordable CD or DVD into your PC's CD/DVD drive.
2. Click **Library**.
3. Pull up the **Burn** screen at the bottom of the main pane.
4. Drag and drop tracks into the "Burn" pane.
5. When you've finished selecting tracks, click Burn **Disc**.

For more information, please see the XM+Napster FAQs at http://napster.xmradio.com.

Occasionally we make improvements to the inno firmware, which is the software that makes your inno work. Updating the firmware is a quick and easy process.

Remember that:

- Your inno must be docked with a power adapter and must be connected to your PC. You cannot update the firmware if inno is not docked and powered.
- Your PC must be connected to the Internet

Using XM+Napster

If you have installed and use XM+Napster, it automatically checks the firmware when you connect inno to your PC. XM+Napster notifies you when it's necessary to update the firmware. Simply follow the instructions.

Don't worry if you miss a firmware update. XM+Napster will always check whether your inno needs an update or not.

Updating inno Firmware

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Using the Update Tool

If you don't use XM+Napster, you can update the inno firmware manually.

1. Insert the XM+Napster CD in your PC's CD-ROM or DVD drive. The XM+Napster software should start automatically.
2. Click on **Browse CD**.
3. Click on **Utils**, then click on **XMFirmwareUpdateClient**.
4. Follow the instructions on the PC screen.

You can run this firmware update tool at any time. If the firmware needs to be updated, the tool will install it automatically. If the firmware is already up-to-date, nothing happens.

Using the Web

Point your Web browser to http://fwupdt.xmradio.com and follow directions.

FM Modulator

(for optional Car Kit use only)

Set the FM frequency that inno transmits on.

Adjust the volume level of the FM transmission.

Settings

ENG

FM Frequency (for optional Car Kit use only)

Your inno contains a built-in FM modulator (or FM transmitter) that allows you to listen to whatever your inno is playing using a car FM radio. All you have to do is set your inno and the FM radio in your car to the same frequency.

1. Place inno in the car dock.
2. Find an unused FM frequency on your FM radio. Note that FM frequency.
3. Select **XM → Settings → FM Modulator → FM Frequency**.
4. Use the up and down arrow buttons to choose the same FM frequency as in step 2. You should hear XM programming over your FM radio when your inno and radio frequencies match.
5. Press the **XM** button to confirm your selection.

FM Level

When listening to your inno using the FM modulator, you can adjust its volume level to match other audio sources (your CD player, other FM stations, or MP3 player).

1. Select **XM → Settings → FM Modulator → FM Level**.
2. Press the left arrow button to decrease the volume level or the right arrow button to increase the volume level.
3. Press the **XM** button to confirm your selection.

Aiming the Antenna

For optimal reception of XM's live satellite signal, your inno antenna should have an unobstructed view of the XM satellites in the southern sky. In large cities, XM also has a network of ground repeaters to help increase the signal coverage.

Your inno can help you aim the home antenna to pull in the strongest possible signal.

1. Select **XM → Settings → Setup → Antenna Aiming**.
2. Slowly turn and tilt the antenna. The signal bars on the display will change.

Move the antenna around until either "Satellite" or "Terrestrial" is at least half strength.

3. The antenna aiming screen remains as long as it's needed to help you position the antenna. When you've found the best position, press the left arrow button repeatedly to exit the Settings menu.
4. Select XM channel 1. You should be able to listen to the XM Preview Channel.

Audio

Tone

You can adjust the audio tone quality to suit the kind of music you're listening to.

1. Select **XM → Settings → Preferences → Set Tone**.
2. Press the up or down arrow buttons to select either "Bass" or "Treble." Adjust the tone settings by pressing the left or right arrows.
3. Press the **XM** button to save your setting and exit the tone control menu. Then press the left arrow button repeatedly until you return to normal operation.

Line Out Level

If you connect inno to another stereo system, you can adjust inno's audio level to match other audio sources. This is not a volume control; use the volume control on your stereo instead.

1. Select **XM → Settings → Setup → Line Out Level**.
2. Use the left or right arrow buttons to decrease or increase the audio level.
3. Press the **XM** button to confirm your selection. Then press the left arrow button repeatedly until you return to normal operation.

Display

Brightness and Contrast

To change the screen's brightness and contrast:

1. Select **XM → Settings → Preferences → Change Display → Brightness**.
2. Press the left or right arrow buttons to adjust brightness.
3. Press the **XM** button to confirm your selection. Then press the left arrow button repeatedly until you return to normal operation.

Backlight Timer

Your inno screen remains lit for a short time after you press a button. To adjust this time period:

1. Select **XM → Settings → Preferences → Change Display → Backlight Timer**.
2. Press the up and down arrow buttons to select the desired time period.
3. Press the **XM** button to confirm your selection.

Stock Ticker

If you created a stock ticker, you will see stock symbols and their prices displayed at the bottom of inno's display. You can control the way the ticker is displayed.

1. Select **XM → Settings → Preferences → Change Display → Display Appearance → Stock Ticker**.
2. Select **Scrolling** to see the ticker move across the screen from right to left. Select **By Pages** to view the ticker as if you're flipping pages of a book.
3. Press the **XM** button to confirm your selection.

Info Extras

If you choose sports or other Info Extras features, you will see sports scores and other information displayed at the bottom of inno's display. You can control the way this information is displayed.

1. Select **XM → Settings → Preferences → Change Display → Display Appearance → Info Extras**.
2. Select **Scrolling** to see the ticker move across the screen from right to left. Select **By Pages** to view the ticker as if you're flipping pages of a book.
3. Press the **XM** button to confirm your selection.

Channel Access

Direct Tune

Normally, as you scroll through live XM channels using the up and down arrow buttons, you can preview the channel list before selecting one channel. inno does not switch to that channel until you push the **XM** button. You can change this so that inno automatically tunes to the channel that you're previewing.

1. Select **XM → Settings → Preferences → Channel Access → Direct Tune**.
2. Select **Direct Tune On**.
3. Press the **XM** button to confirm your selection. Then press the left arrow button repeatedly until you return to normal operation.

To return inno to its default behavior, select **Direct Tune Off**.

Channel Skip/Add

You can simplify the list of channels that you see when you press the up and down arrow buttons. To skip a channel:

1. Select **XM → Settings → Preferences → Channel Access → Channel Skip/Add**.
2. You will see a list of channels. Press the **XM** button to skip a channel. You'll see the **Channel Skip** icon ⊘ displayed beside the channel name. You can choose to skip more than one channel.
3. To add a channel that has been skipped, highlight that channel then press the **XM** button.
4. Press the left arrow button when you're finished.
5. inno confirms by displaying "Channel List Updated."

You can still tune to a channel directly by using the virtual keypad to enter its channel number.

Channel Skip/Add should not be used as a form of parental control. To completely block access to an XM channel, contact XM Listener Care at 1-800-XM-RADIO (1-800-967-2346).

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Clock and Sleep Timer

Time

1. The time is automatically set using the XM signal. Select **XM → Settings → Setup → Set Time → Set Clock → Select Time Zone** to set the correct time zone for your location.
2. Your inno automatically adjusts for Daylight Savings Time. To turn this feature off, select **XM → Settings → Setup → Set Time → Set Clock → Daylight Savings Time → No**.
3. To display time in 12- or 24-hour format, select the desired format through **XM → Settings → Setup → Set Time → Set Clock → 12/24 Hour Mode**.

Sleep Timer

Your inno has a sleep timer that can automatically shut off the unit after a period of time.

1. Select **XM → Settings → Setup → Set Time → Sleep Timer**.
2. Select the desired time period.
3. Press the **XM** button to confirm the selection. Your inno will remember this setting the next time you turn it on.

The sleep timer resets to "Off" every time you turn inno off.

Vehicle Mode

If you listen to your inno in a vehicle, you've probably plugged the power adapter into the cigarette lighter socket. In some vehicles, the cigarette lighter is turned on or off with the ignition key; in other vehicles, the cigarette lighter is powered all the time. To prevent your battery from being drained, choose one of the following settings:

1. Select **XM → Settings → Setup → Set Time → Vehicle Mode**.

2. Choose one of the following settings:

Auto ON/OFF	OFF	Choose this option if the cigarette lighter is always powered. You must turn inno on or off using its own power switch.
	ON	Choose this option if the ignition key switches the cigarette lighter on and off.
Delayed Power Off	OFF or 60-180 minutes	Another option if the cigarette lighter is always powered: inno automatically turns off 60 to 180 minutes after you turn it on.

3. The setting is saved even if you turn inno off. The vehicle mode setting is only active when you use the car dock.

Memory Partition

The internal storage in inno can store recorded XM content and MP3/WMA files. By default, the storage is divided 50/50, but you can select different memory partitions:

setting	typical storage for content recorded from XM	typical storage for PC (MP3 and WMA) tracks
50/50 XM/PC files	25 hours	8 hours
100% XM	50 hours	0 hours

To change the memory partition:

1. Place your inno into the home dock and connect the AC power adapter.
2. Select **XM → Settings → Setup → Memory Partition**.
3. Highlight the desired setting and press the **XM** button.
4. Confirm by selecting **Yes**, or cancel by selecting **No**.

CAUTION: When you change the memory partition, you will erase all your stored XM content and MP3/WMA tracks from your inno.

Restoring Factory Defaults

To restore all inno settings and preferences to a "factory fresh" state:

1. Select **XM** → **Settings** → **Setup** → **Factory Defaults**.
2. You should see this display:

Restore just the settings to factory defaults.

Restore settings to factory defaults and erase all music.

3. Confirm by selecting **Yes**, or cancel by selecting **No**.

Troubleshooting

If your inno does not work the way you expect, first consult this troubleshooting guide. To reset your inno, remove the battery then re-insert it.

If you see this on the display:	You should:
No Signal	Something is blocking the XM signal. Move your inno away from the obstructed area (e.g., an underground garage).
Antenna	Plug the antenna into the home or car dock. Make sure the antenna wire is not bent or broken.
Off Air	The channel you've selected is not currently broadcasting. Tune to another channel.
Loading	Your inno is acquiring audio or program information from the XM signal. This message should disappear in a few seconds in good signal conditions.
Updating	XM is updating your inno with the latest encryption code. Simply wait a few seconds until the update is done. – OR – You may be attempting to tune to a channel that is blocked or that you cannot receive with your subscription package. To receive that channel, contact XM Satellite Radio at 1-800-967-2346.
--- (no artist or title)	No program information, such as artist name or song title, exists.
Channel	You are attempting to tune to a channel that is not available.
All Recording Features Not Available	Activate your XM subscription to enable you to store XM programming on your inno.
This Channel Not Available for Recording	Some programming cannot be recorded due to restrictions placed by the content owners.
This Program Not Available for Recording	Some programming cannot be recorded due to restrictions placed by the content owners.
Connect to XM Antenna Within 30 Days to Avoid Interruption in Listening to XM Recordings	You must receive a live XM signal for at least 8 hours a month. This authenticates your XM subscription and ensures that you can continue to enjoy your recorded XM content and live XM programming.
Please Connect to XM Antenna to Confirm Valid Subscription	Select "Live XM" and make sure you get a strong signal.
Activation Required for Playback	Activate your XM subscription.

Customer Support

Troubleshooting

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If this happens:	You should:
There is no power or your inno shuts off quickly.	Your inno battery may be low. Charge the battery by putting your inno in the dock station and plugging in the AC adapter.
inno shuts off unexpectedly.	Check whether you set the sleep timer, and set it to "Off" if desired. Check whether "Vehicle Mode/Delayed Power Off" is set, and set it to "Off" if desired. inno remembers the "Vehicle Mode" setting even when you turn the device off.
You do not receive all the XM channels you have subscribed to.	Check that you have not skipped any channels (page 74). If you still do not receive all channels, your inno may not be activated. Contact XM Satellite Radio.
No audio.	Check all connections between your inno and your stereo system.
No song title or artist name is displayed.	Nothing is wrong with your inno. That information may be in the process of being updated. Some channels, such as news and sports, may not have such information.
No audio when listening to inno through an FM radio.	Check that your inno and your radio are tuned to the same FM frequency.
Audio fades or has static when listening through an FM radio.	You might be hearing interference from another FM station. Set your inno and your radio to a different FM frequency.
Audio sounds too soft or is distorted when listening to an FM radio.	Raise or lower the FM audio level until the sound quality improves.
XM Instant Traffic and Weather channels sound different from other channels.	Nothing is wrong with your inno. These channels use a different audio technology than the other XM channels.
Controls do not respond.	Check whether the power switch is in the "hold" position. If so, slide it to the center position to unlock the controls.
The controls still refuse to respond, the display does not change, or the backlight does not turn on or off.	Reset your inno by removing and re-inserting the battery.
Battery level meter does not match the expected charge or playback time.	Fully charge the battery, then use your inno until the battery is exhausted. This calibrates the battery level meter.

Customer Support

Troubleshooting

If this happens:	You should:
inno does not communicate with your PC.	Check the power and USB connections between the dock and your PC. Be sure to use the supplied USB cable; any others may prevent your inno from charging or communicating properly with your PC. Remove your inno from its dock station, then re-insert.
Artist and song title information does not display correctly.	inno may not correctly show the artist and song information (ID3 tags) of certain foreign songs.
You cannot transfer songs that you downloaded with Napster To Go™ into inno.	inno is not compatible with Napster To Go's monthly subscription service. To transfer songs from your PC to your inno, you must purchase individual songs or albums from XM+Napster Light or XM+Napster.

Specifications

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inno Player	
Dimensions	56 mm (W) x 94 mm (H) x 16 mm (D) 2.2 in (W) x 3.7 in (H) x 0.6 in (D)
Weight	128 g 4.5 oz
Storage capacity	1 GB (The capacity of the built-in memory may be less than indicated; a portion of the memory is used by the inno firmware.)
Music file formats	MP3 and WMA fixed bitrates: 32, 48, 64, 96, 128, 160, 192, 256, 320 kbps MP3 and WMA variable bitrates: 64-128, 128-256, 160-320 kbps
Audio output	3.5 mm mini-stereo jack
Antenna connector (home and car dock)	RF SMB
Battery	Type: lithium ion Voltage: 3.7 V Capacity: 1750 mAh
External power	Voltage: 5 V DC Current: 2000 mA Polarity:

Customer Support

Specifications

Remote	
Dimensions	39 mm (W) x 95 mm (H) x 12 mm (D) 1.5 in (W) x 3.7 in (H) x 0.47 in (D)
Weight	40 g 1.4 oz
Battery	Type: CR2032 Voltage: 3 V
Model Numbers	
inno player	GEX-INNO1
Home kit	CD-INHOME1
Car accessory kit	CD-INCAR1

Patent Information

Technology. It is prohibited to copy, decompile, disassemble, reverse engineer, hack, manipulate, or otherwise make available any technology incorporated in receivers compatible with the XM Satellite Radio System or that support the XM website, the Online Service or any of its content. Furthermore, the AMBE® voice compression software included in this product is protected by intellectual property rights including patent rights, copyrights, and trade secrets of Digital Voice Systems, Inc. You also agree not to upload, post, transmit or otherwise make available any material that contains software viruses or any other computer code, files, or programs designed to interrupt, disable, or limit the functionality of the XM website or the Online Service. Furthermore, the music, talk, news, entertainment, data, and other content on the Services are protected by copyright and other intellectual property laws and all ownership rights remain with the respective content and data service providers. You are prohibited from any export of the data (or derivative thereof) except in compliance with applicable export laws, rules, and regulations. The user of this or any other software contained in an XM Radio or the XM website and all software used in connection with either is explicitly prohibited from attempting to copy, decompile, reverse engineer, or disassemble the object code, or in any other way convert the object code into human-readable form. The software is licensed solely for use within this product.

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FCC Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

CAUTION: Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Customer Support

LIMITED WARRANTY

WARRANTY VALID ONLY IN COUNTRY OF PRODUCT PURCHASE

WARRANTY

Pioneer Electronics (USA) Inc. (PUSA), and Pioneer Electronics of Canada, Inc. (POC), warrants that products distributed by PUSA in the U.S.A., and by POC in Canada that fail to function properly under normal use due to a manufacturing defect when installed and operated according to the owner's manual enclosed with the unit will be repaired or replaced with a unit of comparable value, at the option of PUSA or POC, without charge to you for parts or actual repair work. Parts supplied under this warranty may be new or rebuilt at the option of PUSA or POC.

THIS LIMITED WARRANTY APPLIES TO THE ORIGINAL OR ANY SUBSEQUENT OWNER OF THIS PIONEER PRODUCT DURING THE WARRANTY PERIOD PROVIDED THE PRODUCT WAS PURCHASED FROM AN AUTHORIZED PIONEER DISTRIBUTOR/DEALER IN THE U.S.A. OR CANADA. YOU WILL BE REQUIRED TO PROVIDE A SALES RECEIPT OR OTHER VALID PROOF OF PURCHASE SHOWING THE DATE OF ORIGINAL PURCHASE OR, IF RENTED, YOUR RENTAL CONTRACT SHOWING THE PLACE AND DATE OF FIRST RENTAL. IN THE EVENT SERVICE IS REQUIRED, THE PRODUCT MUST BE DELIVERED WITHIN THE WARRANTY PERIOD, TRANSPORTATION PREPAID, ONLY FROM WITHIN THE COUNTRY OF PURCHASE AS EXPLAINED IN THIS DOCUMENT. YOU WILL BE RESPONSIBLE FOR REMOVAL AND INSTALLATION OF THE PRODUCT. PUSA OR POC, AS APPROPRIATE, WILL PAY TO RETURN THE REPAIRED OR REPLACEMENT PRODUCT TO YOU WITHIN THE COUNTRY OF PURCHASE.

(warranty continues next page)

Customer Support

PRODUCT WARRANTY PERIOD

Portable Satellite Radio..... 1 Year Parts & Labor
Portable Satellite Radio Battery..... 90 Days Parts & Labor

The warranty period for retail customers who rent the product commences upon the date product is first put into use (a) during the rental period or (b) retail sale, whichever occurs first.

WHAT IS NOT COVERED

IF THIS PRODUCT WAS PURCHASED FROM AN UNAUTHORIZED DISTRIBUTOR, THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND THIS PRODUCT IS SOLD STRICTLY "AS IS" AND "WITH ALL FAULTS". PIONEER SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL AND/OR INCIDENTAL DAMAGES. PIONEER DOES NOT WARRANT ANY PRODUCT LISTED ABOVE WHEN IT IS USED IN A TRADE OR BUSINESS OR IN ANY INDUSTRIAL OR COMMERCIAL APPLICATION. THIS WARRANTY DOES NOT APPLY IF THE PRODUCT HAS BEEN SUBJECTED TO POWER IN EXCESS OF ITS PUBLISHED POWER RATING. THIS WARRANTY DOES NOT COVER THE CABINET OR ANY APPEARANCE ITEM, USER ATTACHED ANTENNA, ANY DAMAGE TO THE PRODUCT RESULTING FROM ALTERATIONS, MODIFICATIONS NOT AUTHORIZED IN WRITING BY PIONEER, ACCIDENT, MISUSE OR ABUSE, DAMAGE DUE TO LIGHTNING OR TO POWER SURGES, SUBSEQUENT DAMAGE FROM LEAKING, DAMAGE FROM INOPERATIVE BATTERIES, OR THE USE OF BATTERIES NOT CONFORMING TO THOSE SPECIFIED IN THE OWNER'S MANUAL. THIS WARRANTY DOES NOT COVER THE COST OF PARTS OR LABOR WHICH WOULD BE OTHERWISE PROVIDED WITHOUT CHARGE UNDER THIS WARRANTY OBTAINED FROM ANY SOURCE OTHER THAN A PIONEER AUTHORIZED SERVICE COMPANY OR OTHER DESIGNATED LOCATION. THIS WARRANTY DOES NOT COVER DEFECTS OR DAMAGE CAUSED BY THE USE OF UNAUTHORIZED PARTS OR LABOR FROM IMPROPER MAINTENANCE. ALTERED, DEFACED, OR REMOVED SERIAL NUMBERS VOID THIS ENTIRE WARRANTY.

(warranty continues next page)

NO OTHER WARRANTIES

IN THE U.S.A. - PIONEER LIMITS ITS OBLIGATIONS UNDER ANY IMPLIED WARRANTIES INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, TO A PERIOD NOT TO EXCEED THE WARRANTY PERIOD. NO WARRANTIES SHALL APPLY AFTER THE WARRANTY PERIOD. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS AND SOME STATES DO NOT ALLOW THE EXCLUSIONS OR LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

IN CANADA – EXCEPT AS EXPRESSLY PROVIDED HEREIN, THERE ARE NO REPRESENTATIONS, WARRANTIES, OBLIGATIONS OR CONDITIONS, IMPLIED, STATUTORY OR OTHERWISE, APPLICABLE TO THIS PRODUCT.

TO OBTAIN SERVICE

PUSA has appointed a number of Authorized Service Companies throughout the U.S.A. should your product require service. To receive warranty service you need to present your sales receipt showing place and date of original owner's transaction. If shipping the unit you will need to package it carefully and send it, transportation prepaid by a traceable, insured method, to an Authorized Service Company. Package the product using adequate padding material to prevent damage in transit. Include your name, address and telephone number where you can be reached during business hours.

ENG

Customer Support

Customer Support

On all complaints and concerns call Customer Support at **1-800-421-1404**

DISPUTE RESOLUTION

Following our response to any initial request to Customer Support, should a dispute arise between you and Pioneer, Pioneer makes available to you, without charge, it's Complaint Resolution Program. You are required to use the Complaint Resolution Program before you exercise any rights under, or seek any remedies, created by Title I of the Magnuson-Moss Warranty-Federal Trade Commission Improvement Act, 15 U.S.C. 2301 et seq.

To use the Complaint Resolution Program call 1-800-421-1404 and explain to the customer service representative the problem you are experiencing, steps you have taken to have the product repaired during the warranty period and the name of the authorized Distributor / Dealer from whom the Pioneer product was purchased. After the complaint has been explained to the representative, a resolution number will be issued. Within 40 days of receiving your complaint, Pioneer will investigate the dispute and will either: (1) respond to your complaint in writing informing you what action Pioneer will take, and in what time period, to resolve the dispute; or (2) respond to your complaint in writing informing you why it will not take any action.

For hook-up and operation of your unit or to locate an Authorized Service Company, please call or write:

PIONEER ELECTRONICS SERVICE, INC.
P.O. BOX 1760
LONG BEACH, CALIFORNIA 90810
1-800-421-1404
http://www.pioneerelectronics.com

Pioneer

PIONEER ELECTRONICS SERVICE, INC.
P.O. BOX 1760
LONG BEACH, CALIFORNIA 90810
1-800-421-1404
http://www.pioneerelectronics.com

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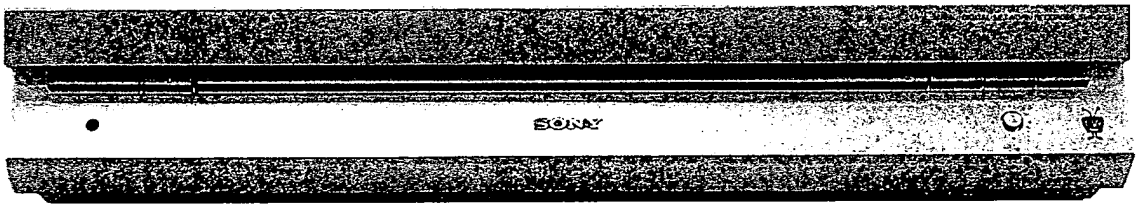
Self Diagnosis Supported model

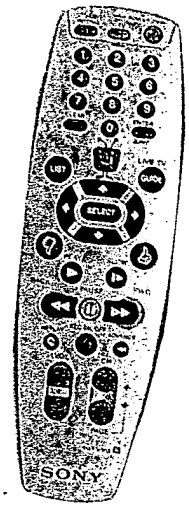
SERVICE MANUAL

SVR-3000 RMT-V303

US Model



SVR-3000



RMT-V303

SPECIFICATIONS

Inputs and Outputs:

Video In: S-Video 4-pin mini DIN (1)
Composite Video RCA (1)
Video Out: S-Video 4-pin mini DIN (2)
Composite Video RCA (2)
Audio Line In: Stereo L/R RCA (1 pair)
Audio Line Out: Stereo L/R RCA (2 pairs)
RF In: F-Connector Female (1)
RF Out: F-Connector Female (1)
Telephone: RJ-11 Female, 2 wire (1)
Control Out: 3.5 mm Mini Jack Sockets (2)

Supplied Accessories:

Remote Control (1)
Size AA (R6) Batteries (2)
Audio/Video Cable (1)
IR Control Cable (two IR emitters) (2)
Serial Control Cable (1)
S-Video Cable (1)
Phone Cord (1)
Phone Splitter (1)

General: Accessories:

Power Requirements: 120 V AC, 60 Hz
Power Consumption: 29 W
Operating Temperature: 21°C to 45°C (70°F to 113°F)
Operating Humidity: 5% to 80%
Dimensions: Approx. 430 x 77 x 326 mm (w/h/d)
Approx. $17^{1/4}$ x $3^{7/8}$ x $12^{1/8}$ (w/h/d)
(including projecting parts and controls)
Mass: Approx. 4.5 kg (9 lbs. 1 oz.)

Design and specifications are subject to change without notice.

TiVo™

DIGITAL NETWORK RECORDER

SONY®

9-965-936-03

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WARNINGS AND CAUTIONS

CAUTION

Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield, or carbon painted on the CRT, after removing the anode.

WARNING!!

An isolation transformer should be used during any service to avoid possible shock hazard, because of live chassis. The chassis of this receiver is directly connected to the ac power line.

⚠ SAFETY-RELATED COMPONENT WARNING!!

Components identified by shading and ⚠ mark on the schematic diagrams, exploded views, and in the parts list are critical for safe operation. Replace these components with Sony parts whose part numbers appear as shown in this manual or in supplements published by Sony. Circuit adjustments that are critical for safe operation are identified in this manual. Follow these procedures whenever critical components are replaced or improper operation is suspected.

ATTENTION!!

Apres avoir deconnecte le cap de l'anode, court-circuiter l'anode du tube cathodique et celui de l'anode du cap au chassis metallique de l'appareil, ou la couche de carbone peinte sur le tube cathodique ou au blindage du tube cathodique.

Afin d'eviter tout risque d'electrocution provenant d'un châssis sous tension, un transformateur d'isolement doit etre utilisé lors de tout dépannage. Le châssis de ce récepteur est directement raccordé à l'alimentation du secteur.

⚠ ATTENTION AUX COMPOSANTS RELATIFS A LA SECURITE!!

Les composants identifies par une trame et par une marque ⚠ sur les schemas de principe, les vues explosees et les listes de pieces sont d'une importance critique pour la securite du fonctionnement. Ne les remplacer que par des composants Sony dont le numero de piece est indique dans le present manuel ou dans des supplements publies par Sony. Les reglages de circuit dont l'importance est critique pour la securite du fonctionnement sont identifies dans le present manuel. Suivre ces procedures lors de chaque remplacement de composants critiques, ou lorsqu'un mauvais fonctionnement suspecte.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly soldered connections. Check the entire board surface for solder splashes and bridges.

2. Check the interboard wiring to ensure that no wires are "pinched" or touching high-wattage resistors.

3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.

4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.

5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.

6. Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.

7. Check the B+ and HV to see if they are specified values. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.

8. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

Leakage Test

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instructions.

2. A battery-operated AC milliampmeter. The Data Precision 245 digital multimeter is suitable for this job.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low voltage scale. The Simpson's 250 and Sanwa SH-63TRD are examples of passive VOMs that are suitable. Nearly all battery-operated digital multimeters that have a 2 VAC range are suitable (see Figure A).

How to Find a Good Earth Ground

A cold-water pipe is a guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms.

If a cold-water pipe is not accessible, connect a 60- to 100-watt trouble-light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side on the line; the lamp should light at normal brilliance if the screw is at ground potential (see Figure B).

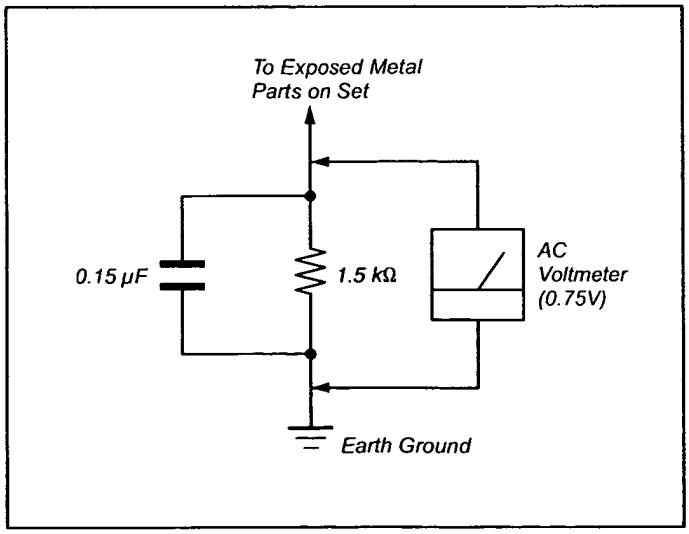


Figure A. Using an AC voltmeter to check AC leakage.

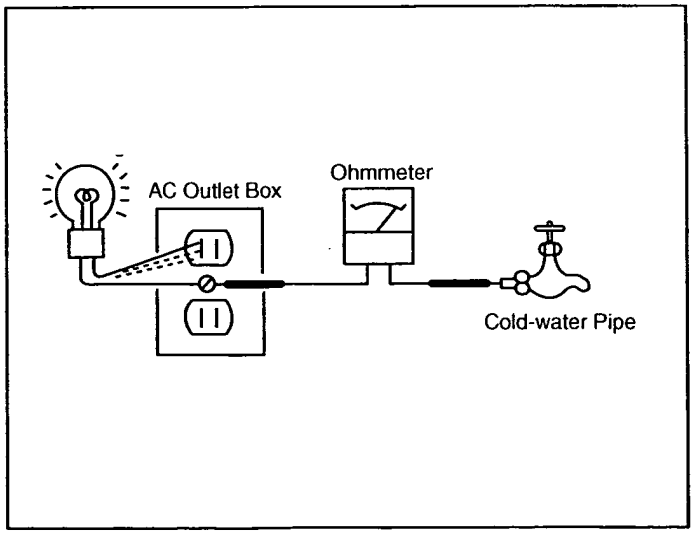


Figure B. Checking for earth ground.

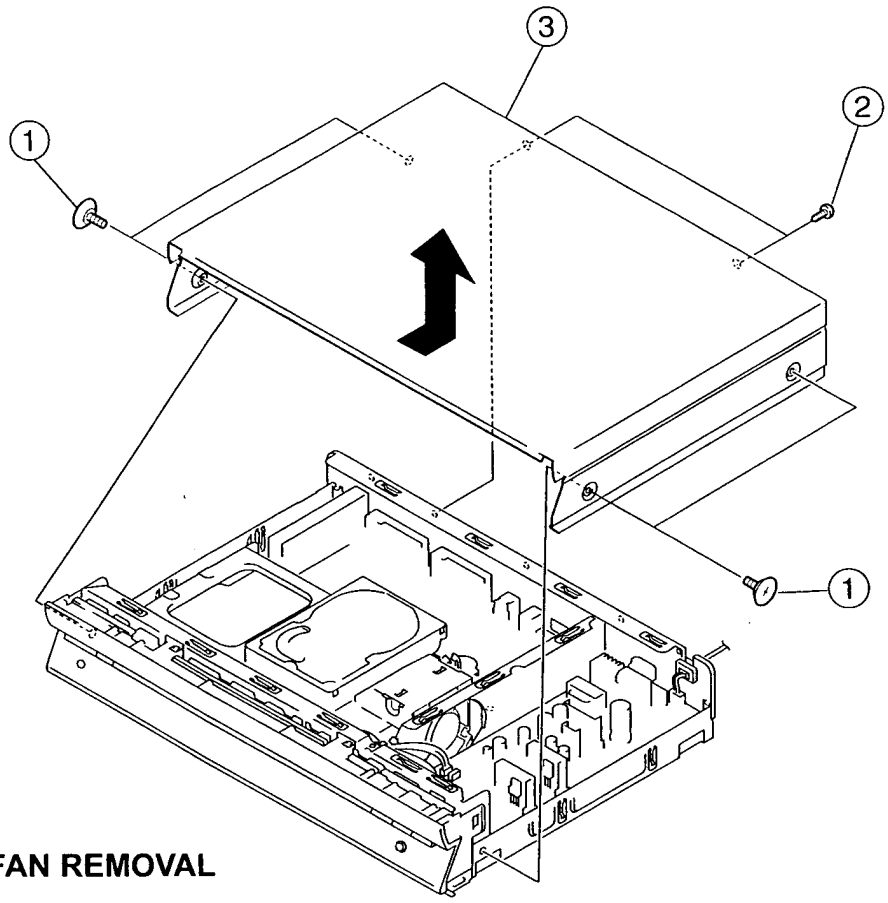
SECTION 1: DISASSEMBLY

1-1. TOP COVER REMOVAL

(1) Remove 4 screws (Tapping)

(2) Remove 2 screws (+BVTP 3x10 Type 2 IT-3)

(3) Remove top cover



1-2. HARD DISK AND D.C. FAN REMOVAL

(1) Remove 2 screws (+BV IBR 3x8)

(2) Remove Fitting (F) Bracket

(3) Remove D.C. fan connector

(4) Remove fan dampers

(5) Remove 4 screws (+BV)

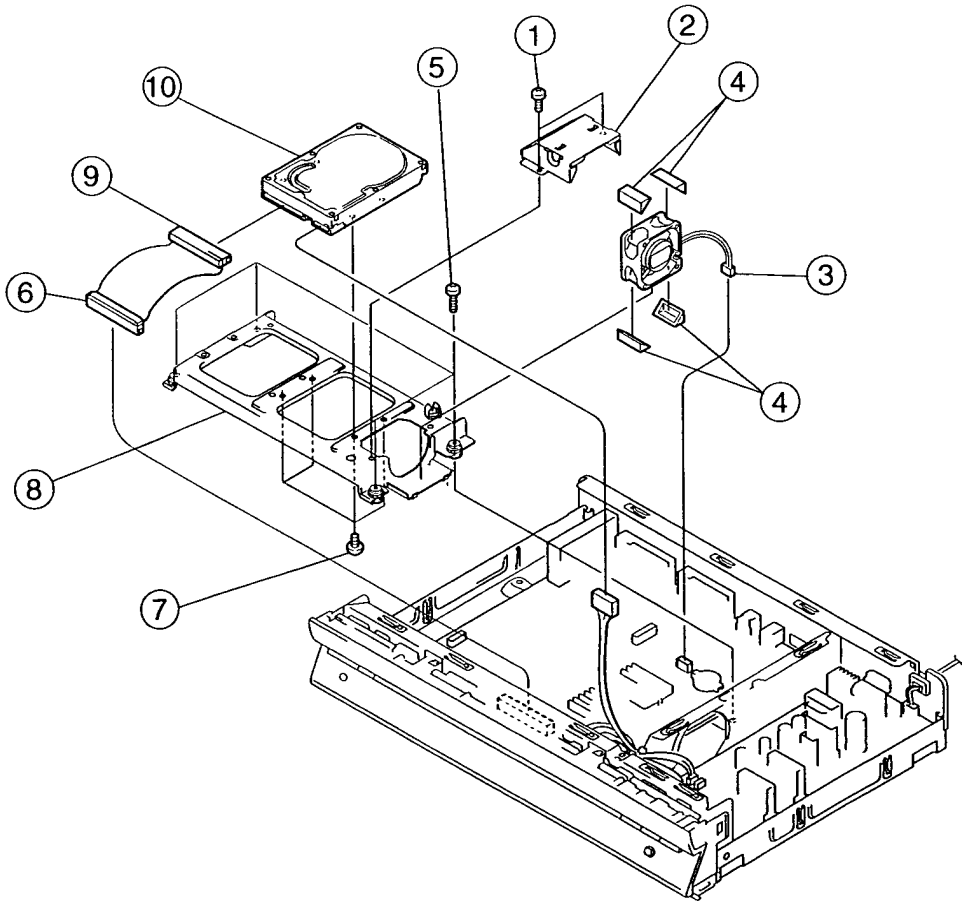
(6) Detach harness (MH-111)

(7) Remove 4 screws (Unified Screw 4.5)

(8) Remove Bracket (DX), Fitting

(9) Detach harness (MH-111) from hard disk

(10) Remove hard disk



1-3. MA-411 BOARD AND PS-445 BOARD REMOVAL

(1) Detach Flat (FMF-002) Cable

(2) Disconnect harness (MP-132)

(3) Disconnect harness (MP-133)

(4) Remove 5 screws (+BV IBR 3x8)

(5) Remove 1 screw (Screw +P 3x3)

(6) Remove 5 screws (Screw +BV 3x10)

(7) Remove MA-411 Board

(8) Remove the Power Cord

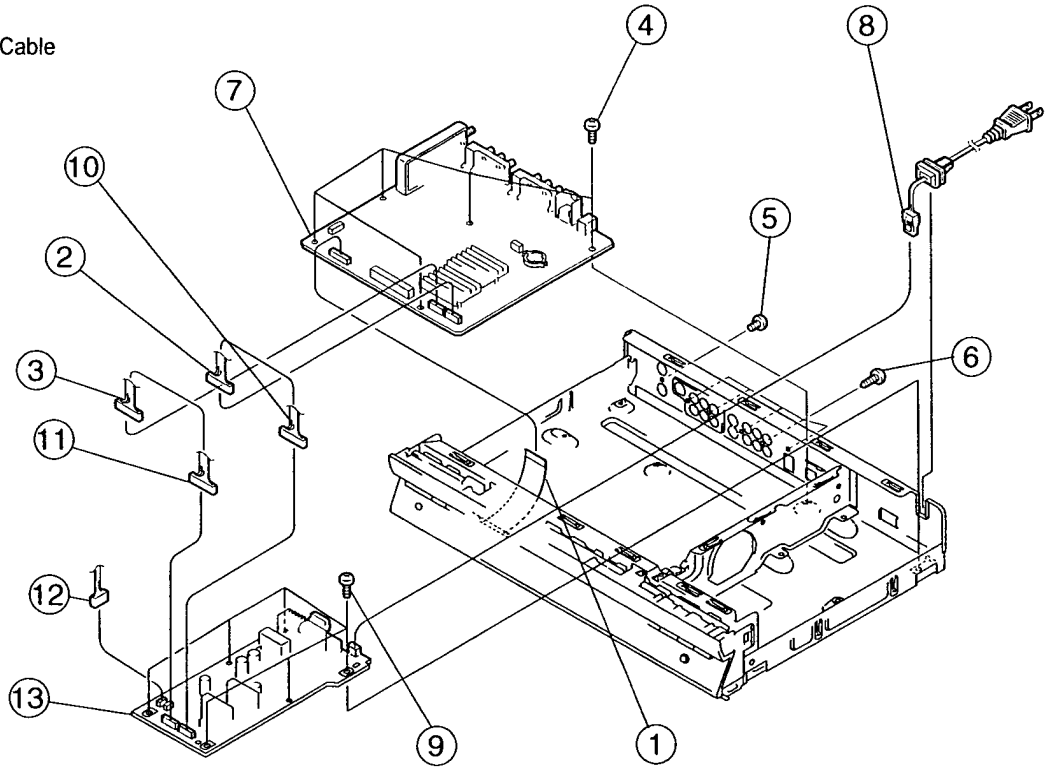
(9) Remove 6 screws (+BV IBR 3x8)

(10) Remove harness (MP-132)

(11) Disconnect harness (MP-133)

(12) Disconnect harness (HP-140)

(13) Remove PS-445 Board

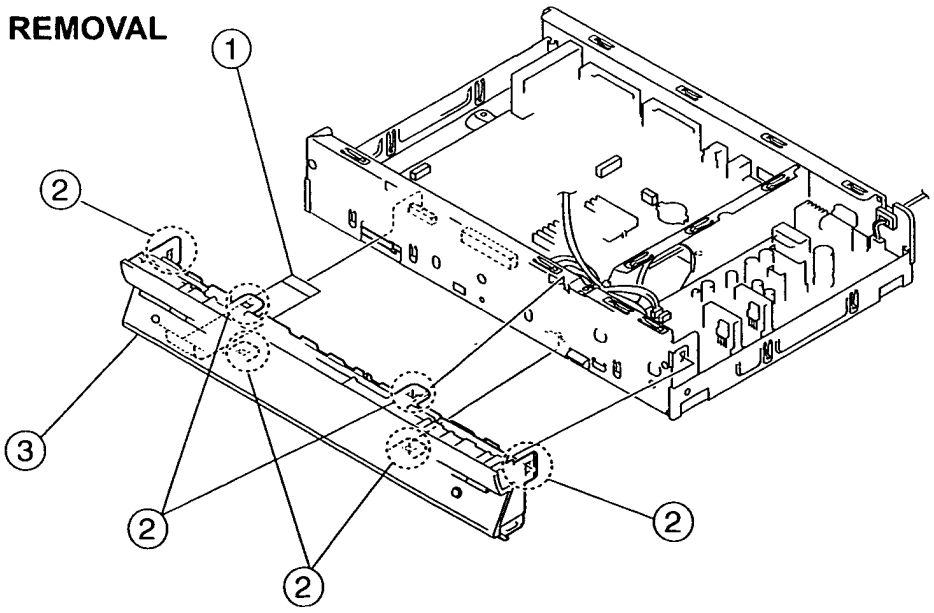


1-4. FRONT PANEL ASSEMBLY REMOVAL

(1) Detach Flat (FMF-001) Cable

(2) Release tabs

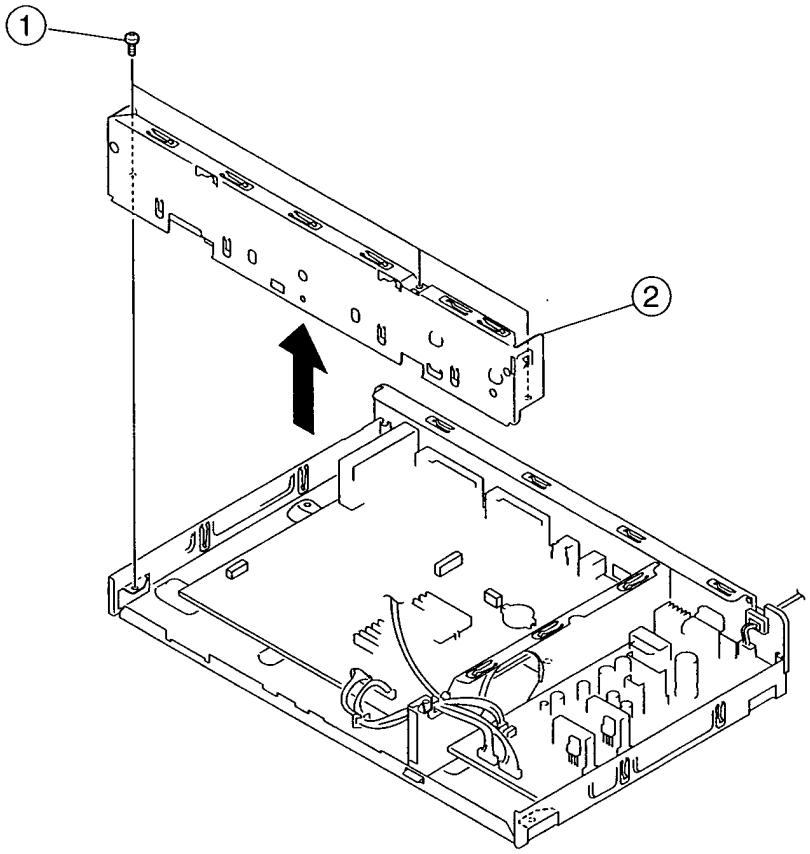
(3) Gently pull off Front Panel Assembly



1-5. FRONT FRAME REMOVAL

(1) Remove 3 screws (+BV IBR 3x8)

(2) Remove Front Frame



1-6. FL-127 BOARD AND FR-188 BOARD REMOVAL

(1) Remove 6 screws (+BVTP 2.6x12)

(2) Disconnect Flat Cable

(3) Remove Push Plate

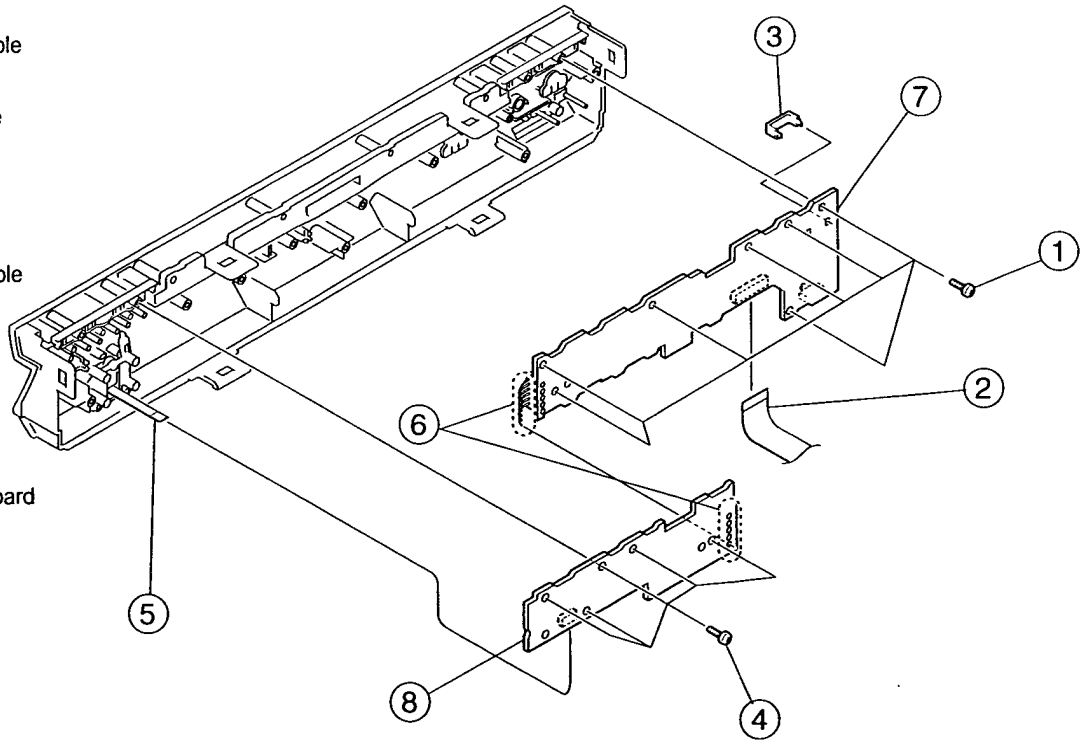
(4) Remove 5 screws (+BVTP 2.6x12)

(5) Disconnect Flat Cable

(6) Remove CN0402

(7) Remove FL-127 Board

(8) Remove FR-188 Board



1-7. SERVICE POSITION

(1) Remove Top Cover

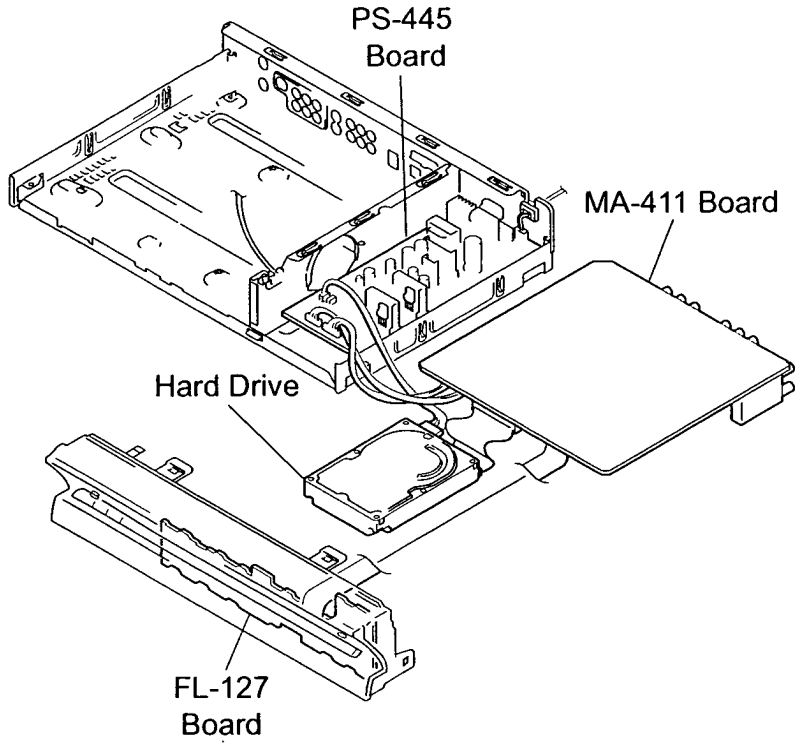
(2) Remove Hard Disk and Fan

(3) Remove Boards

(4) Remove Front Panel Assembly

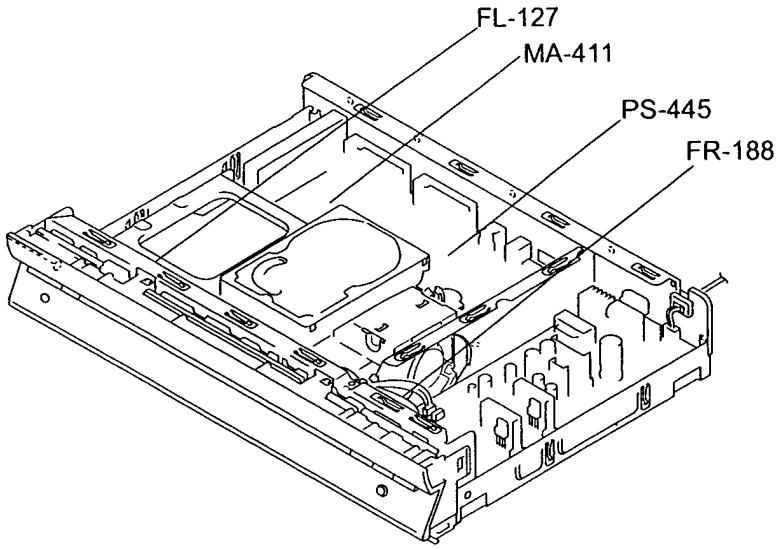
(5) Remove Front Frame

(6) Use the remote to operate the unit while in Service Position



SECTION 2: DIAGRAMS

2-1. CIRCUIT BOARDS LOCATION



2-2. PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM INFORMATION

All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.

All electrolytics are in 50V unless otherwise specified.

All resistors are in ohms. kΩ=1000Ω, MΩ=1000kΩ

Indication of resistance, which does not have one for rating electrical power, is as follows: Pitch : 5mm
Rating electrical power : $^1/_4$W

$^1/_4$W in resistance, $^1/_{10}$W and $^1/_8$W in chip resistance.

: nonflammable resistor.

: fusible resistor.

△ : internal component.

□ : panel designation and adjustment for repair.

⊥ : earth ground

⏚ : earth-chassis

All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

Readings are taken with a color-bar signal input.

Readings are taken with a 10MΩ digital multimeter.

Voltages are DC with respect to ground unless otherwise noted.

Voltage variations may be noted due to normal production tolerances.

All voltages are in V.

S : Measurement impossibillity.

: B+line.

: B-line (Actual measured value may be different).

: signal path (RF).

Circled numbers are waveform references.

The components identified by shading and ⚠ symbol are critical for safety. Replace only with part number specified.

The symbol indicates a fast operating fuse and is displayed on the component side of the board. Replace only with fuse of the same rating as marked.

Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

Le symbole indique une fusible a action rapide. Doit etre remplace par une fusible de meme yaleur, comme maque.

REFERENCE INFORMATION

RESISTOR

: RN	METAL FILM
: RC	SOLID
: FPRD	NONFLAMMABLE CARBON
: FUSE	NONFLAMMABLE FUSIBLE
: RW	NONFLAMMABLE WIREWOUND
: RS	NONFLAMMABLE METAL OXIDE
: RB	NONFLAMMABLE CEMENT
: ※	ADJUSTMENT RESISTOR

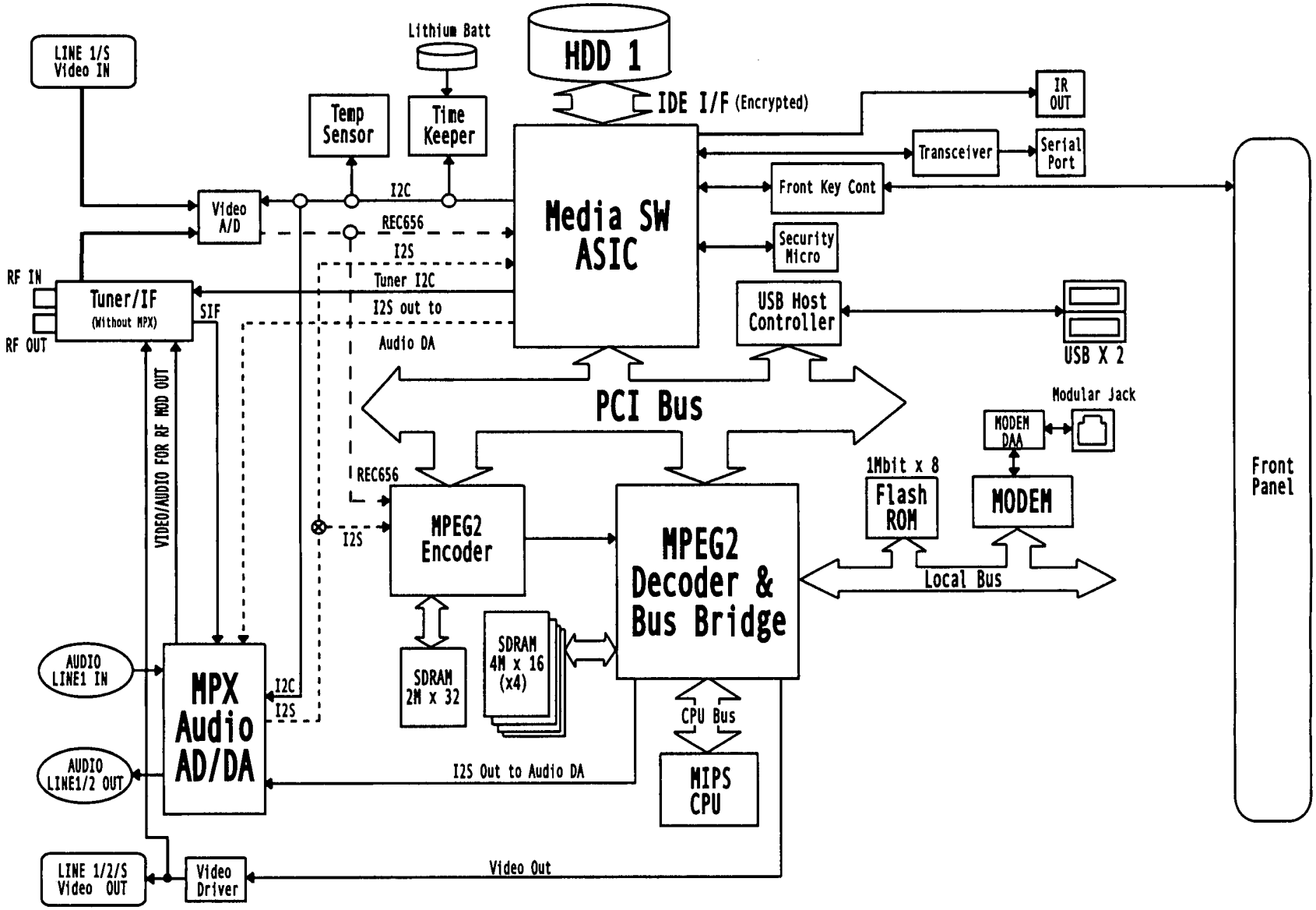
COIL

: LF-8L	MICRO INDUCTOR

CAPACITOR

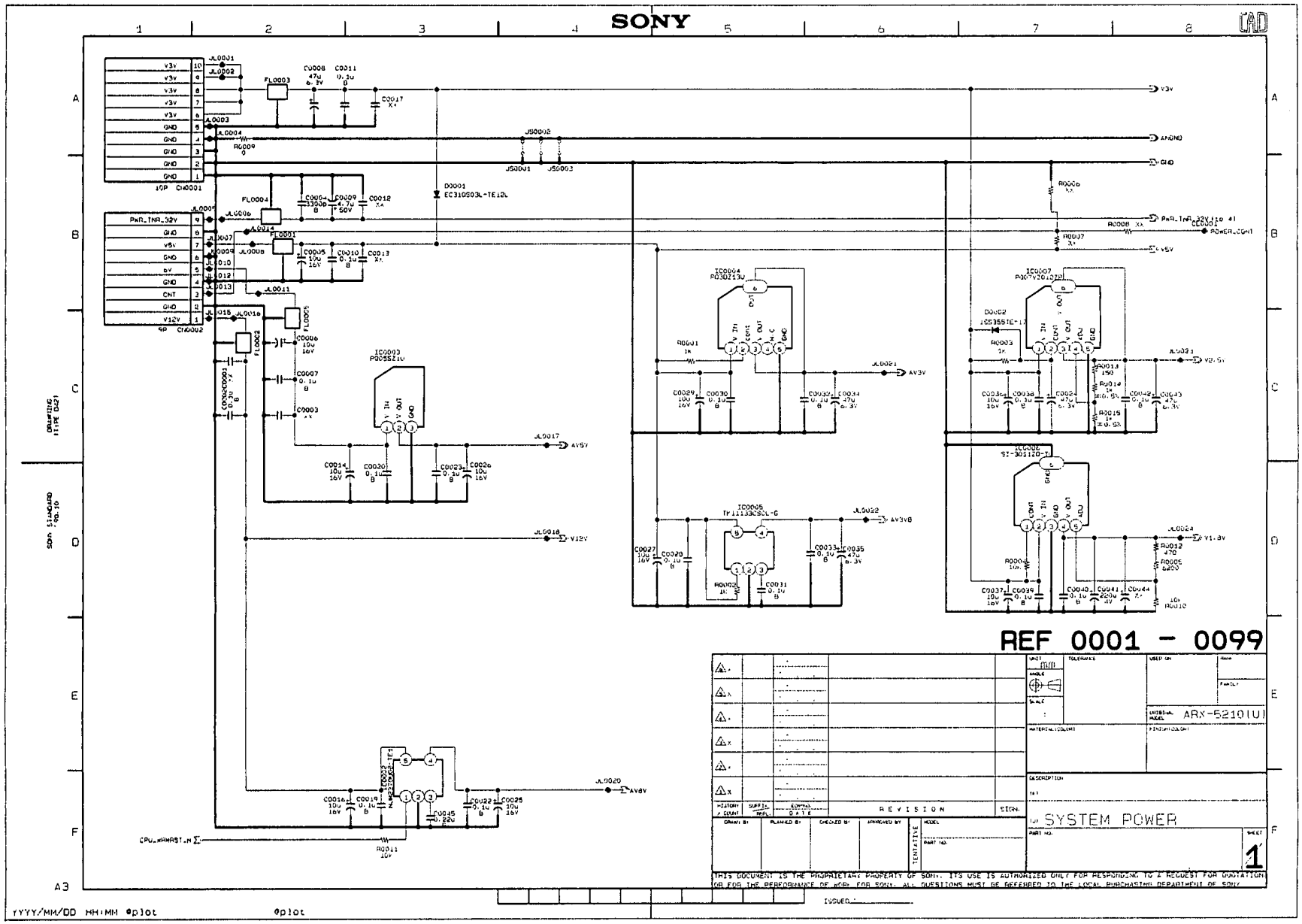
: TA	TANTALUM
: PS	STYROL
: PP	POLYPROPYLENE
: PT	MYLAR
: MPS	METALIZED POLYESTER
: MPP	METALIZED POLYPROPYLENE
: ALB	BIPOLAR
: ALT	HIGH TEMPERATURE
: ALR	HIGH RIPPLE

2-3. BLOCK DIAGRAM

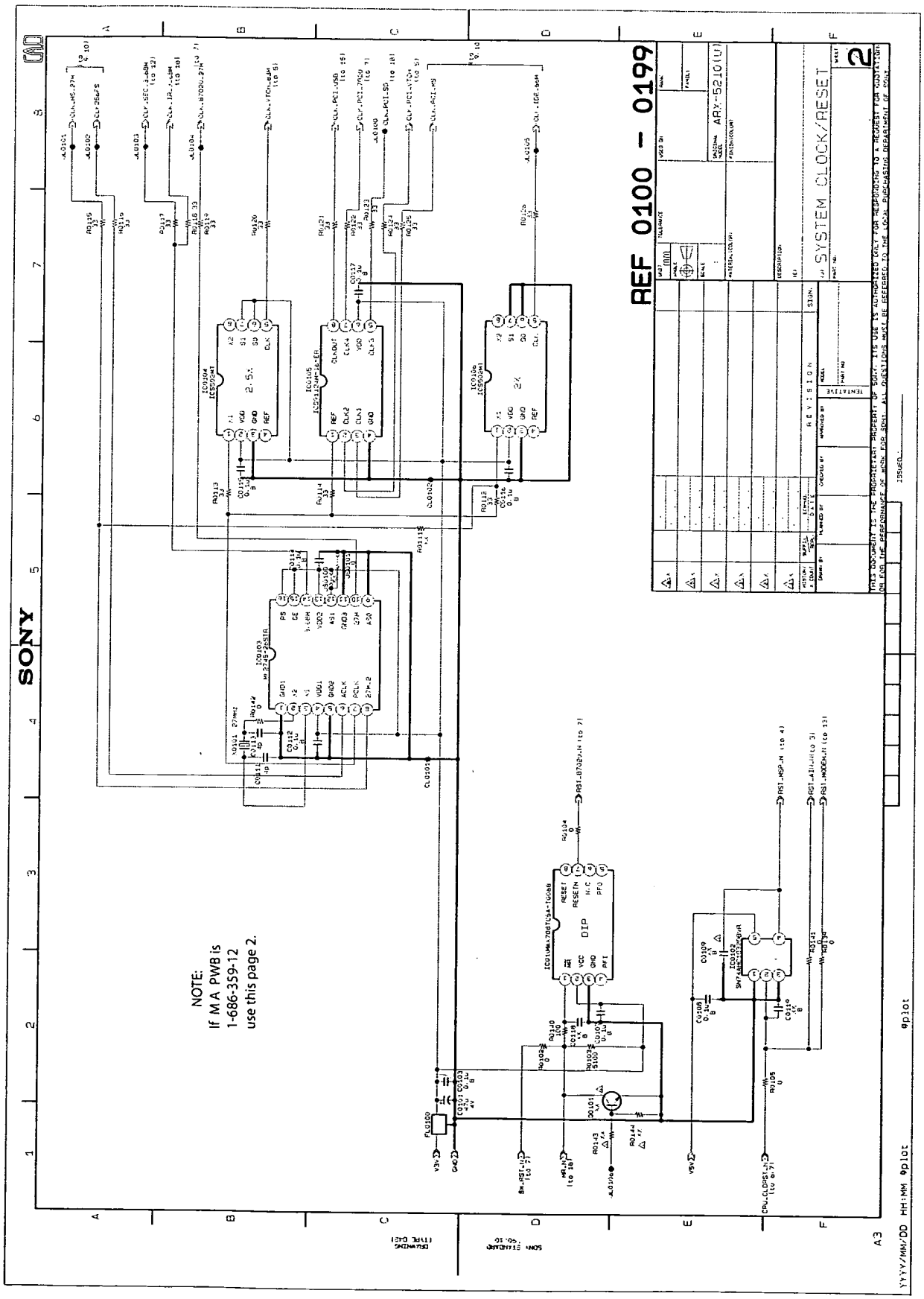


2-4. SCHEMATIC DIAGRAMS AND SUPPORTING INFORMATION

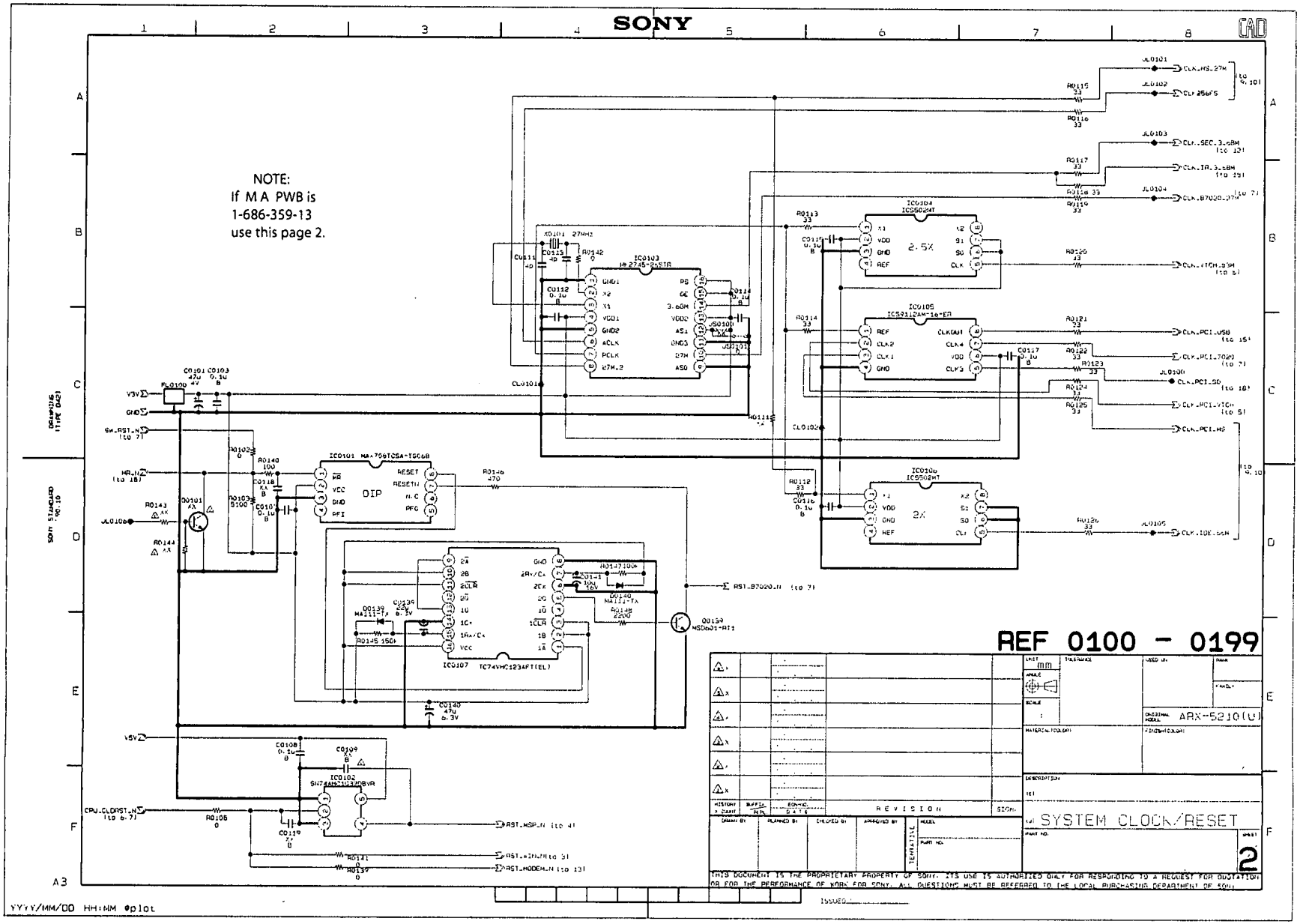
SYSTEM POWER

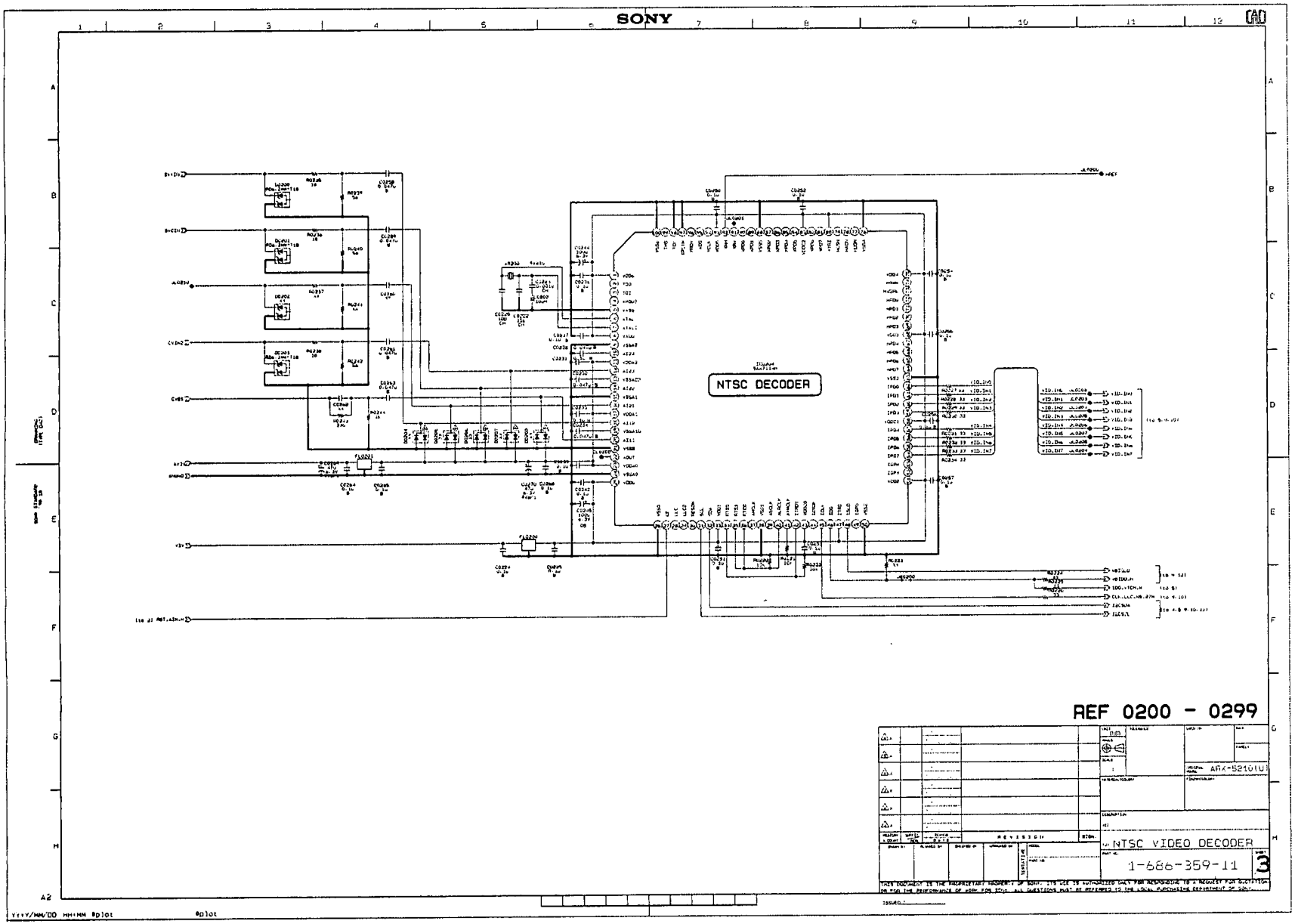


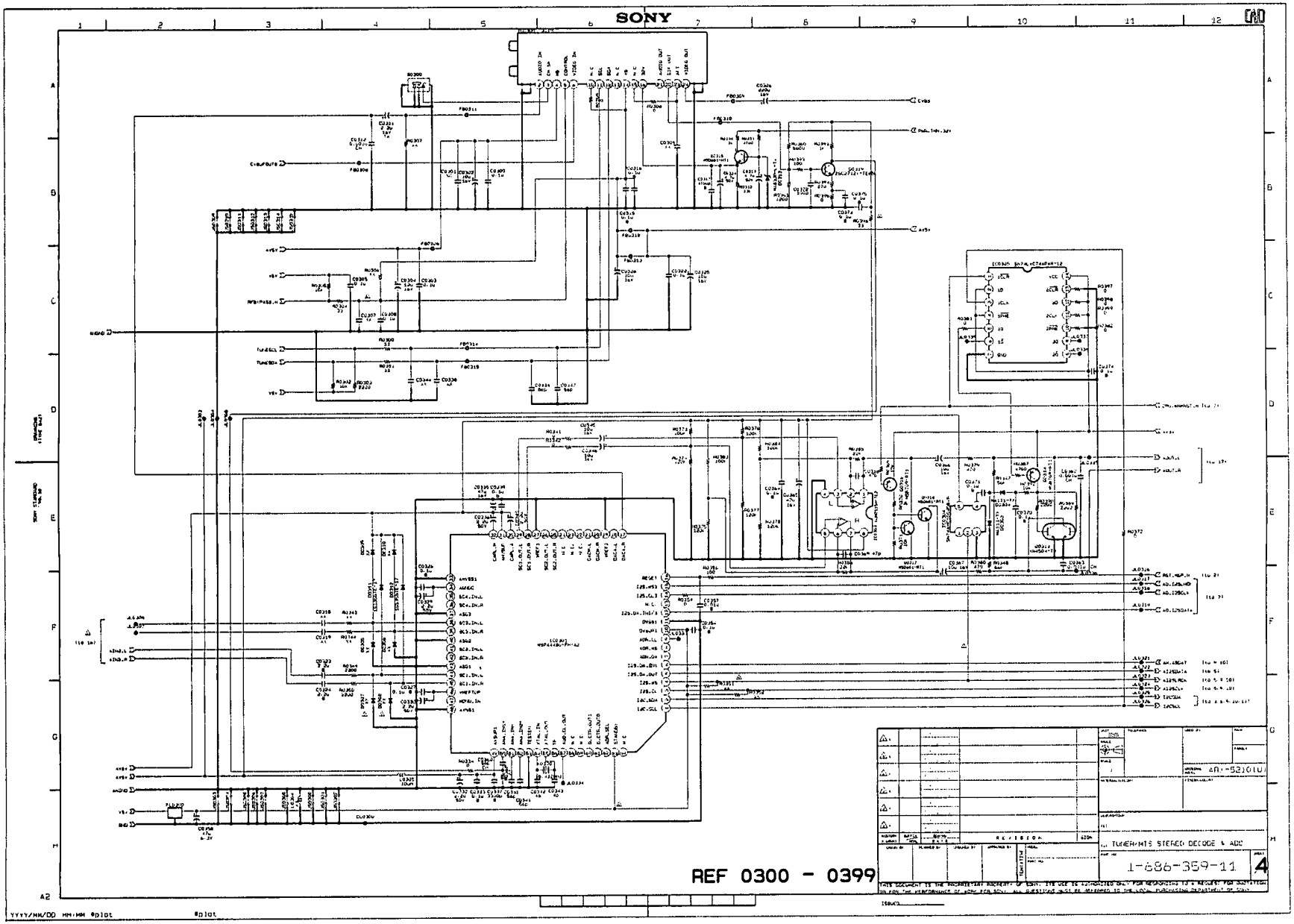
SYSTEM CLOCK & RESET FOR MA PWB 1-686-359-12



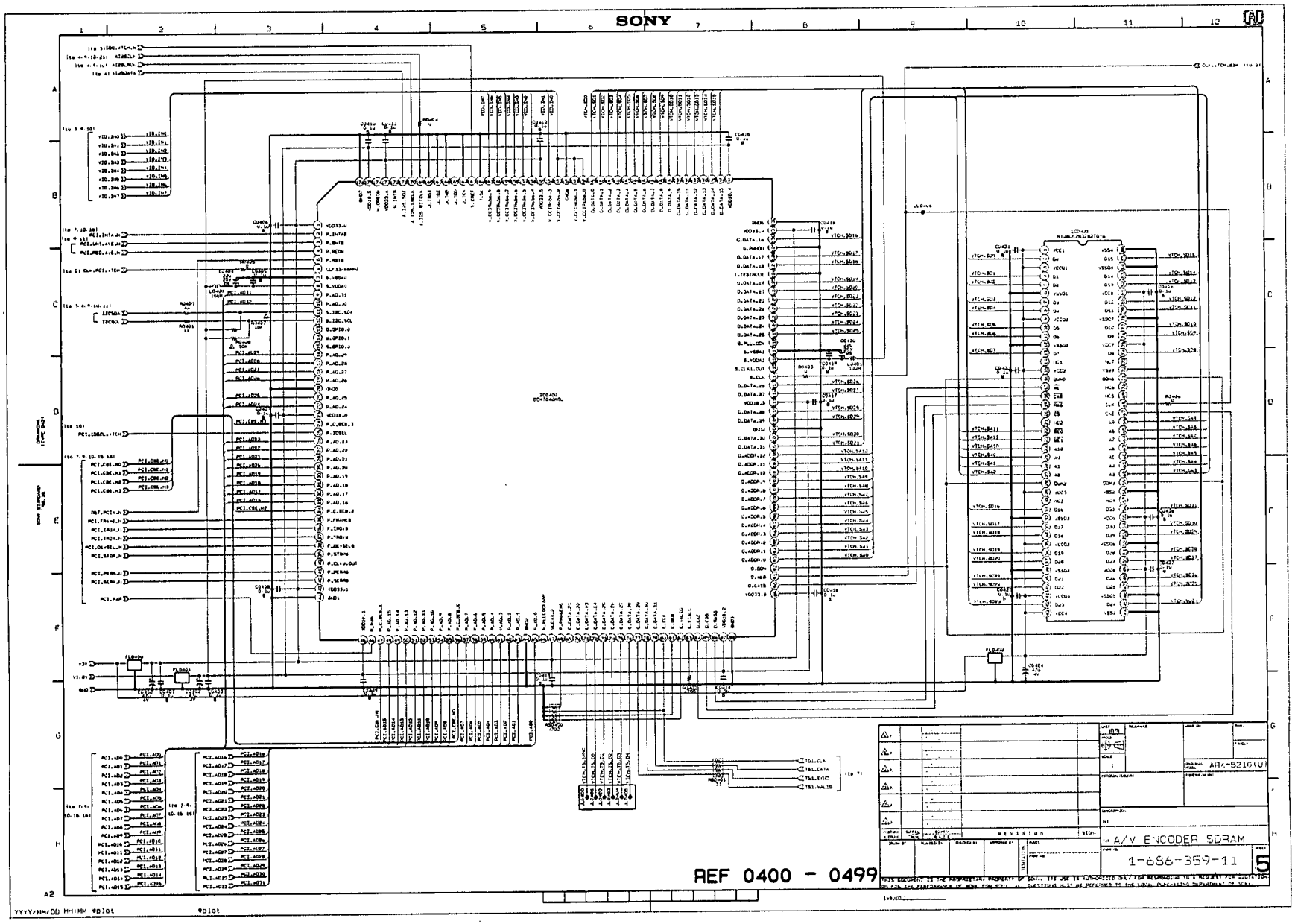
SYSTEM CLOCK & RESET FOR MA PWB 1-686-359-13

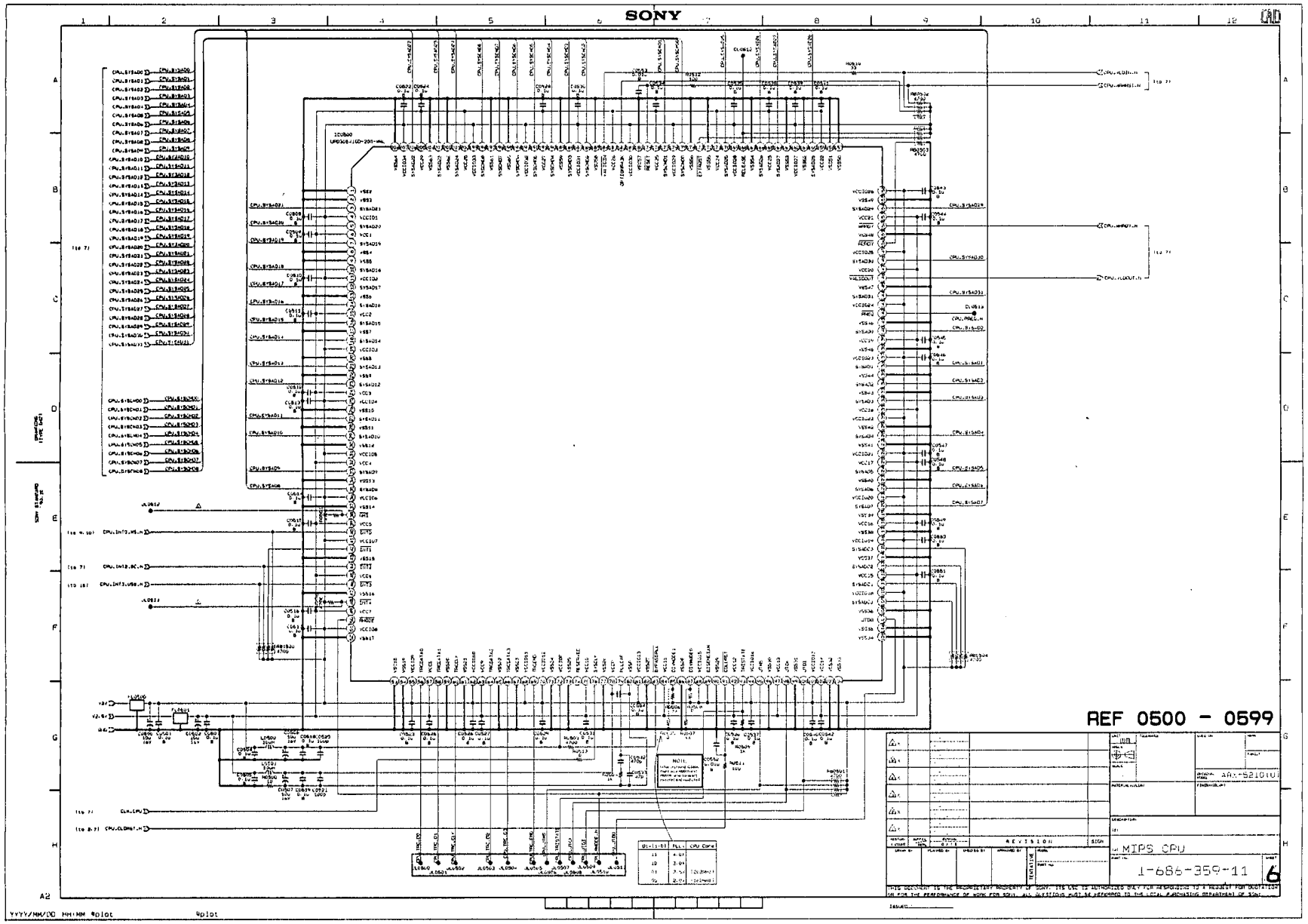


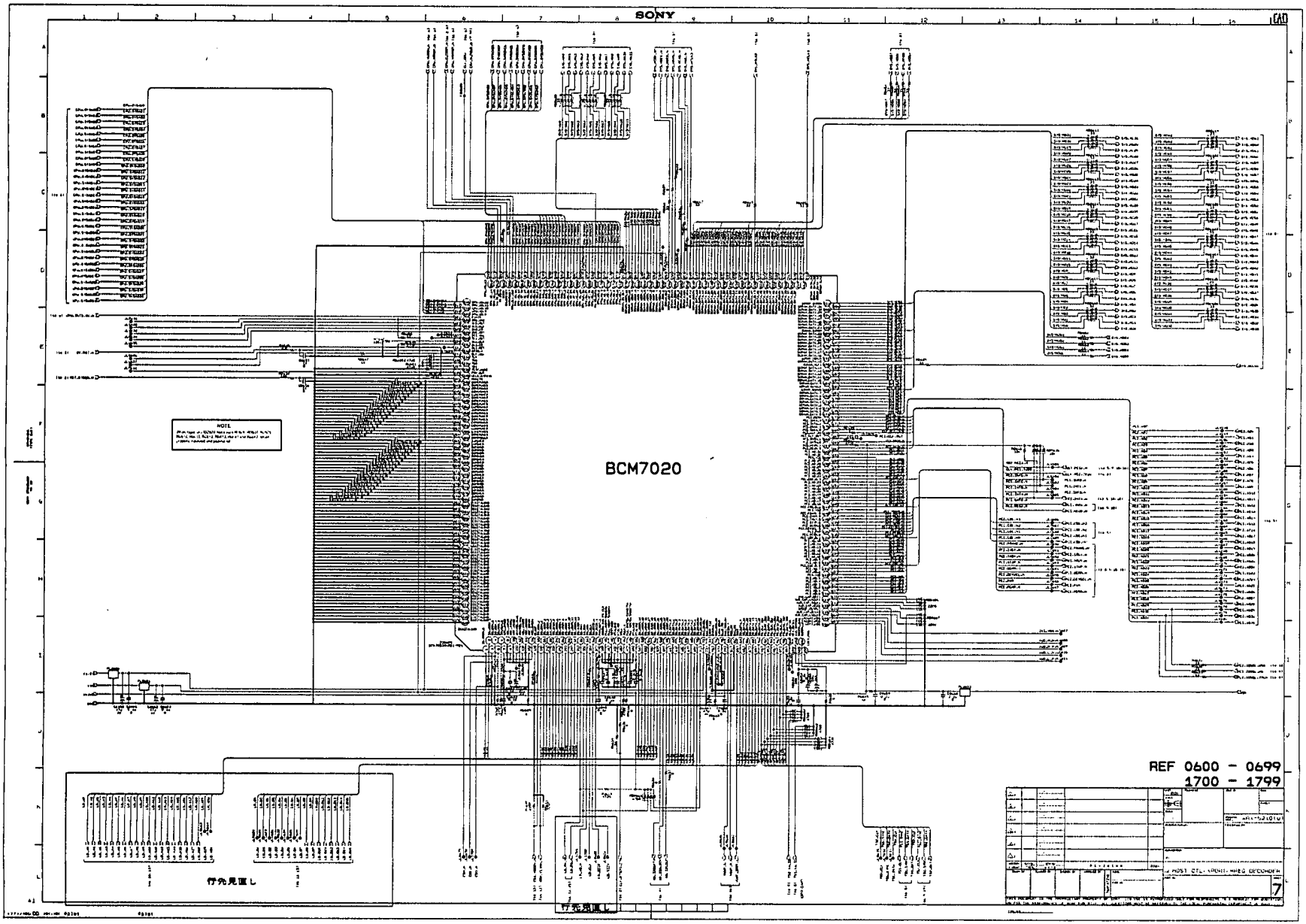

SONY
NTSC DECODER
REF 0200 - 0299
ARX-5210(U)
NTSC VIDEO DECODER
1-686-359-11


SONY
REF 0300 - 0399
TUNER/MTS STEREO DECODE & ADC
1-686-359-11
4

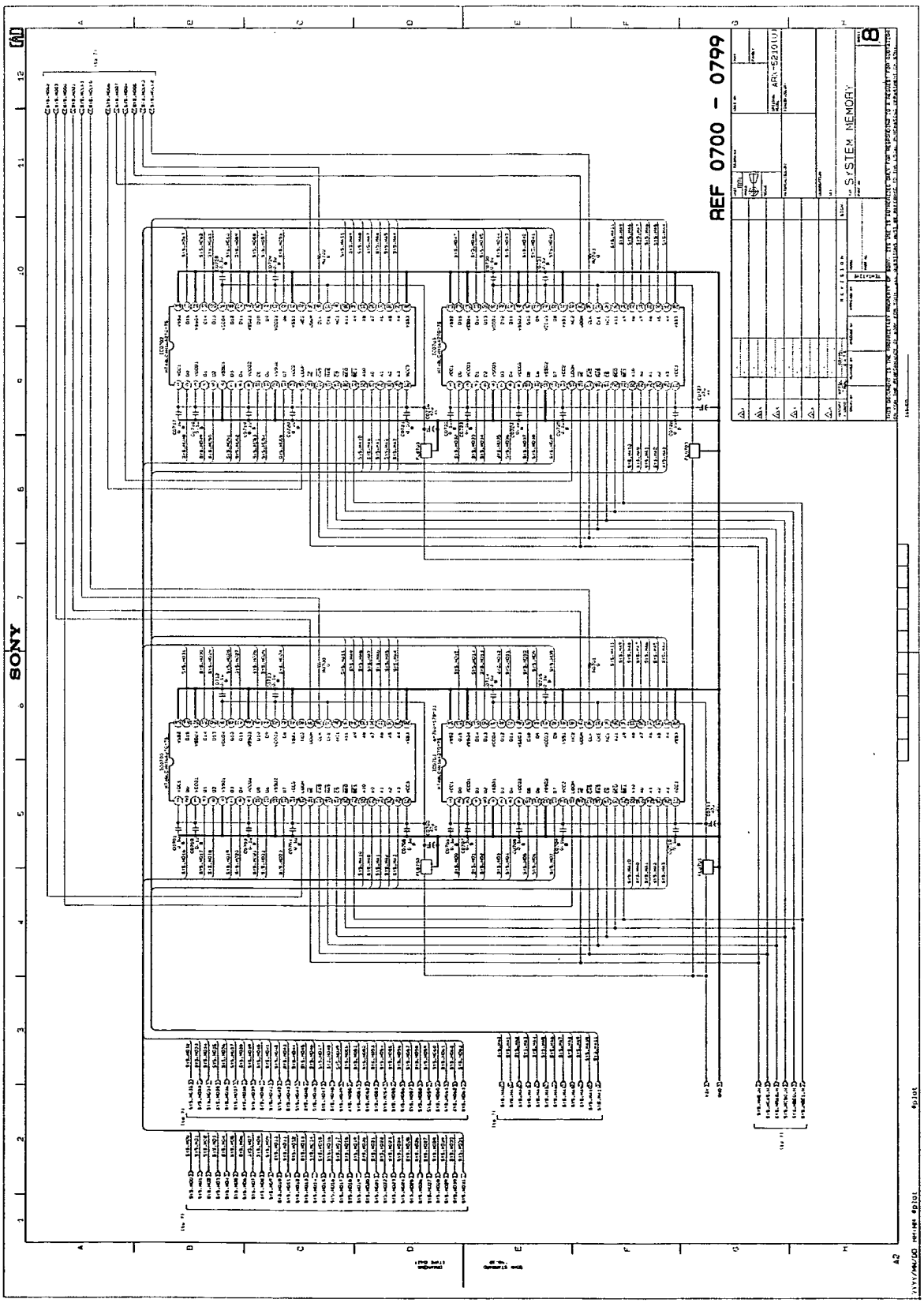
A/V ENCODER SDRAM



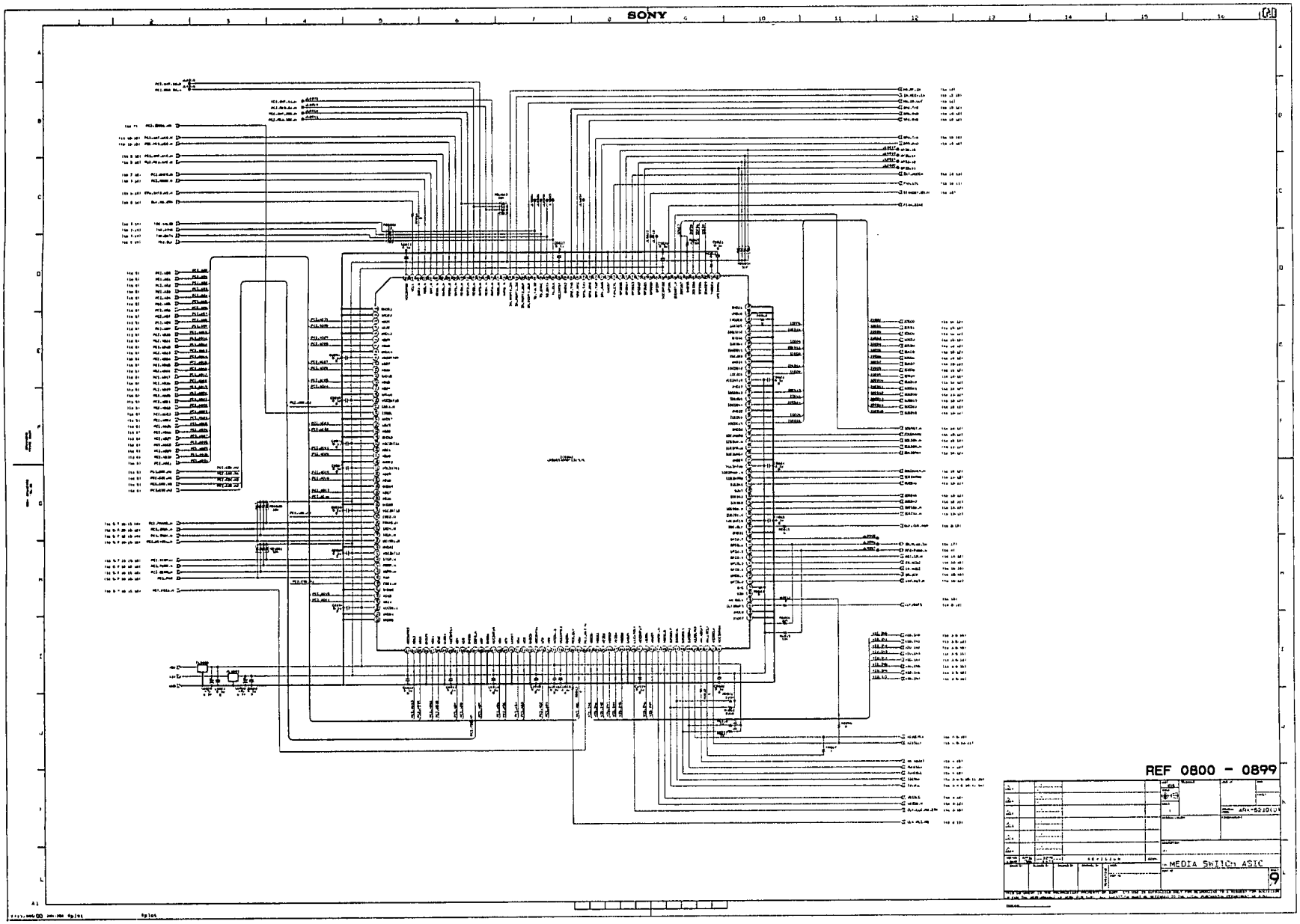

SONY
REF 0500 - 0599
MIPS CPU
A-6863-359-11
6

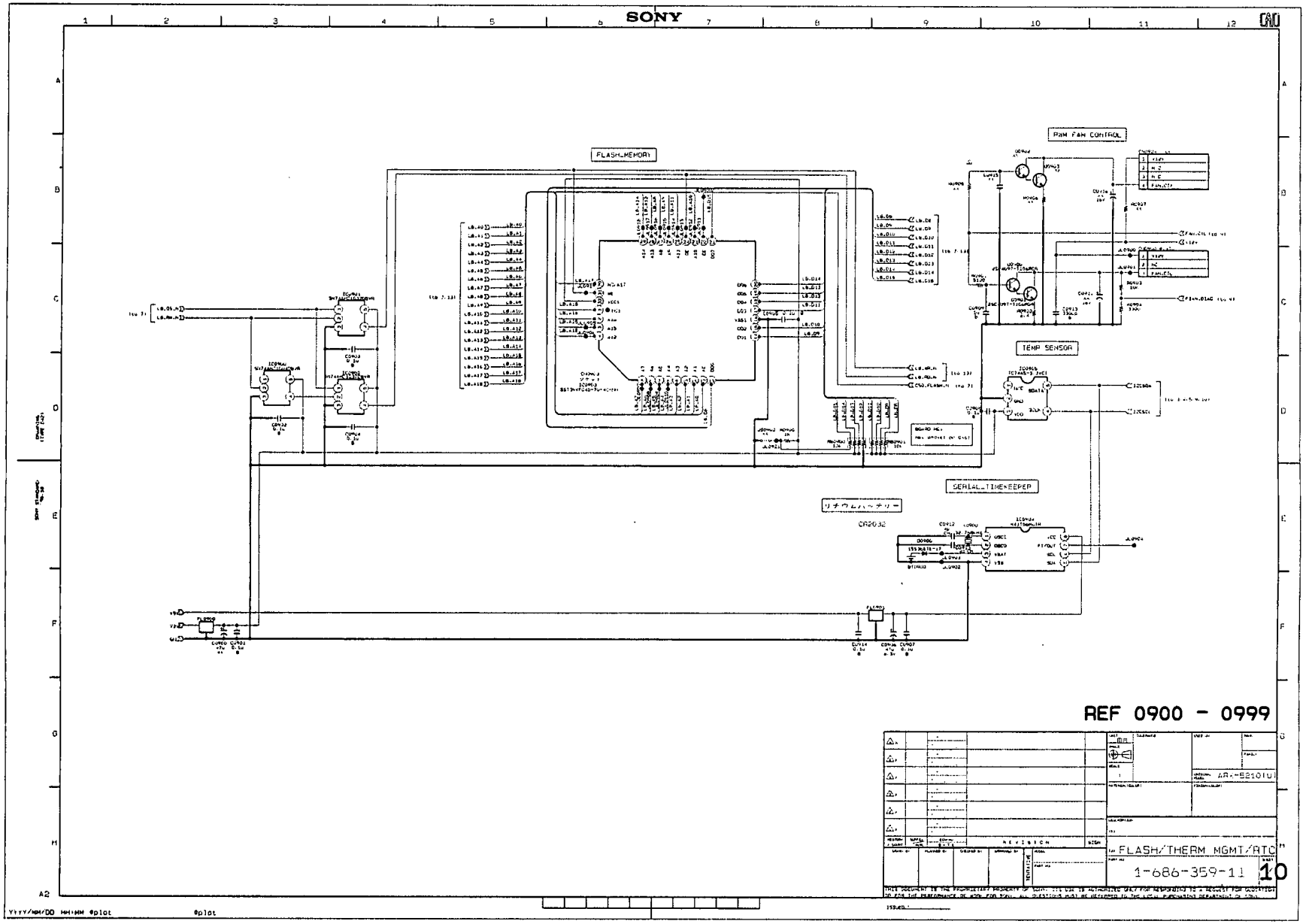

SONY
BCM7020
REF 0600 - 0699
1700 - 1799

SYSTEM MEMORY

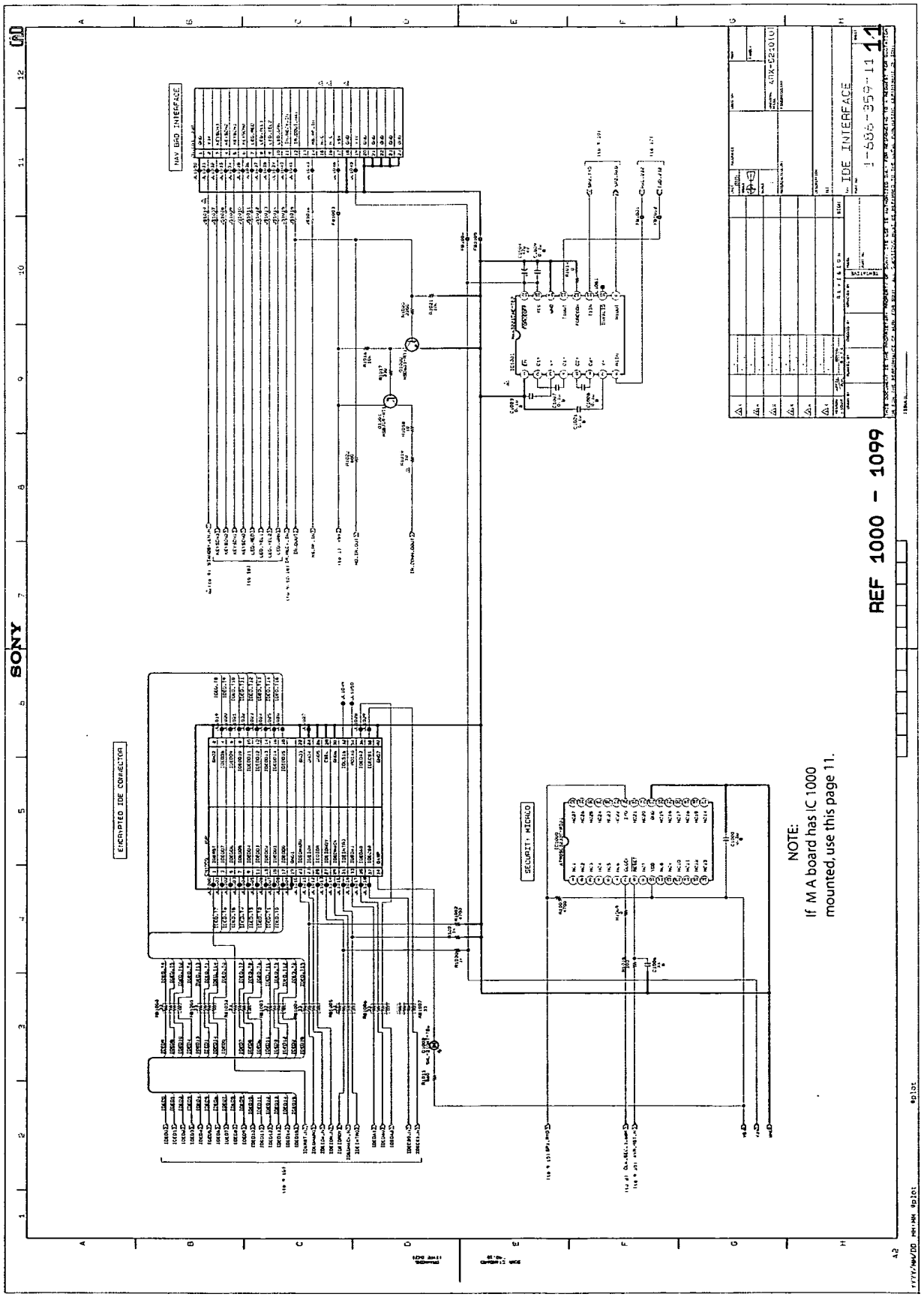


MEDIA SWITCH ASIC

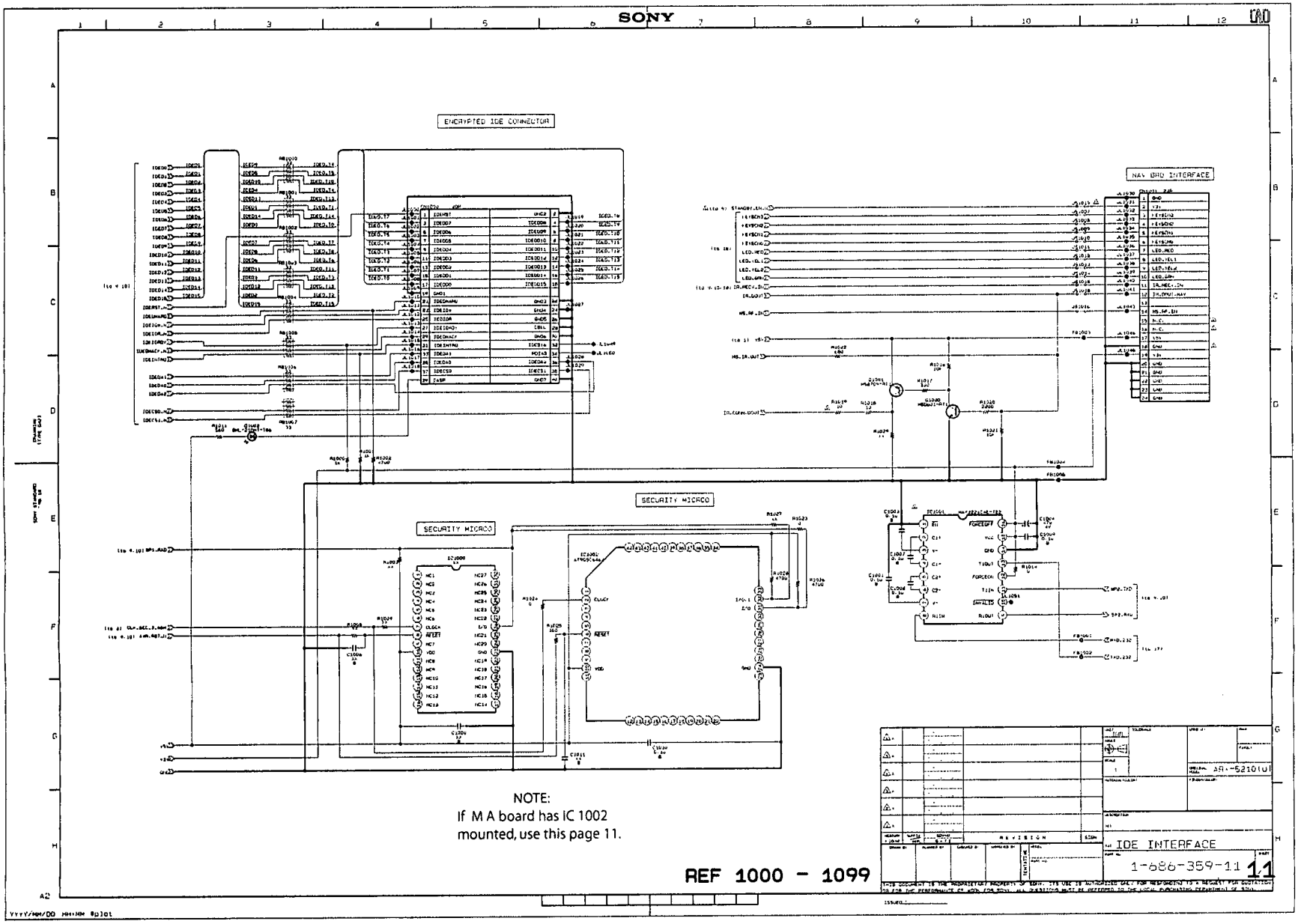


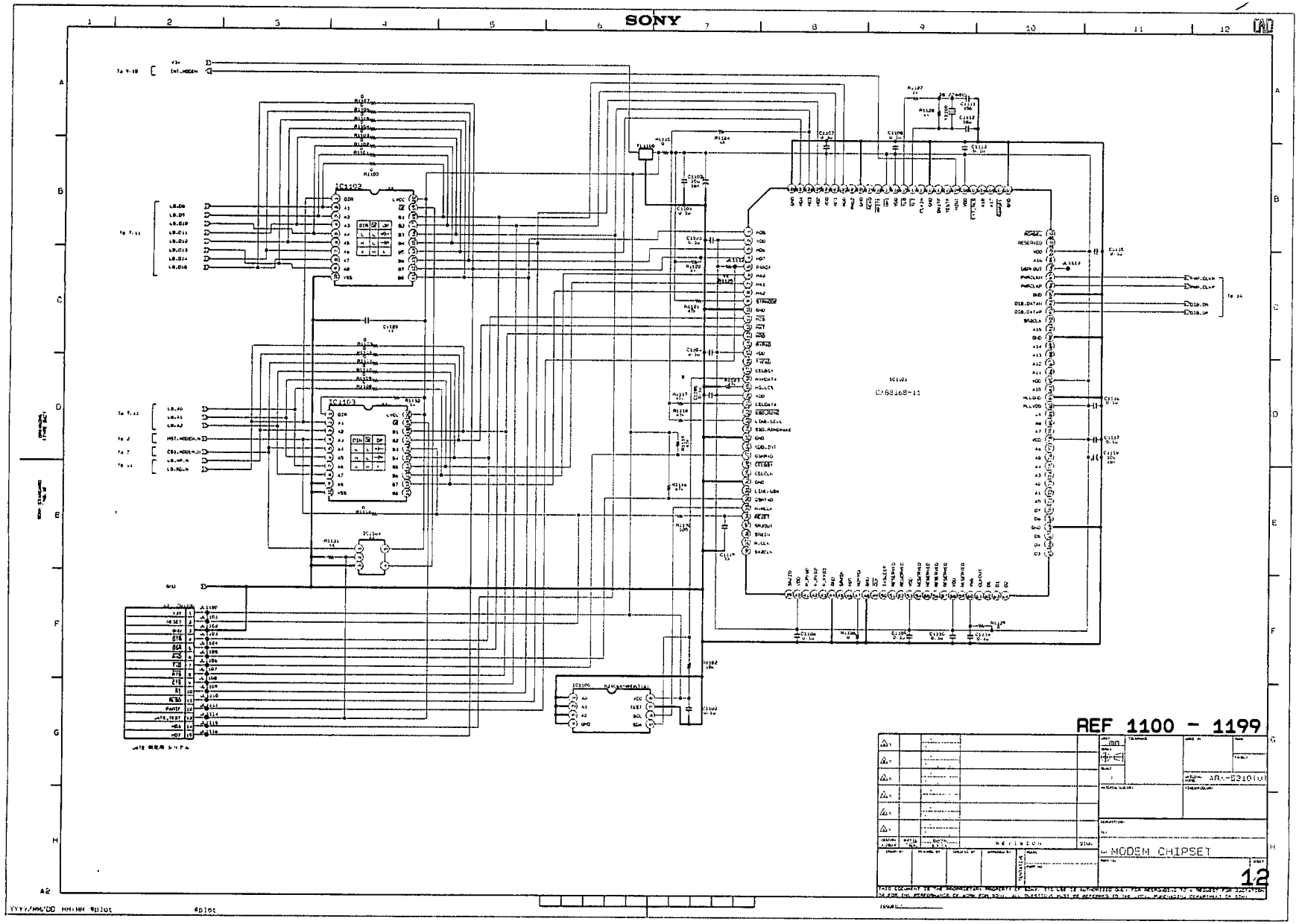

SONY
FLASH_MEMORY
FAN CONTROL
TEMP SENSOR
SERIAL_TIMEKEEPER
リチウムバッテリー
REF 0900 - 0999
FLASH/THERM MGMT/RTC
1-686-359-11
10

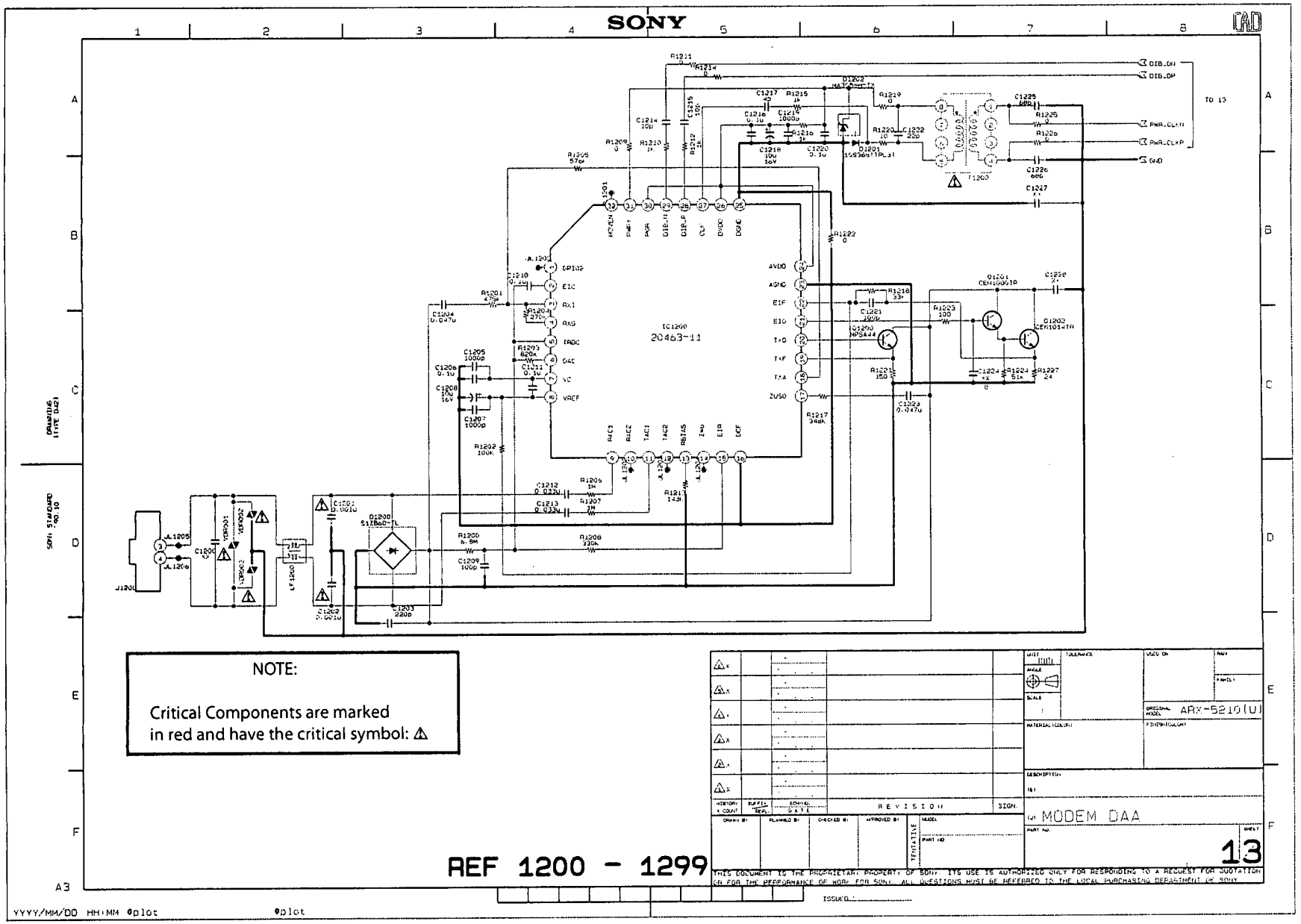
IDE INTERFACE FOR MA BOARD WITH IC 1000



IDE INTERFACE FOR MA BOARD WITH IC 1002




SONY
REF 1100 - 1199
MODEM CHIPSET
12


SONY
CAD
IC1200
20463-11
NOTE:
Critical Components are marked
in red and have the critical symbol: ⚠
REF 1200 - 1299
MODEM DAA
13
ARX-5210(U)
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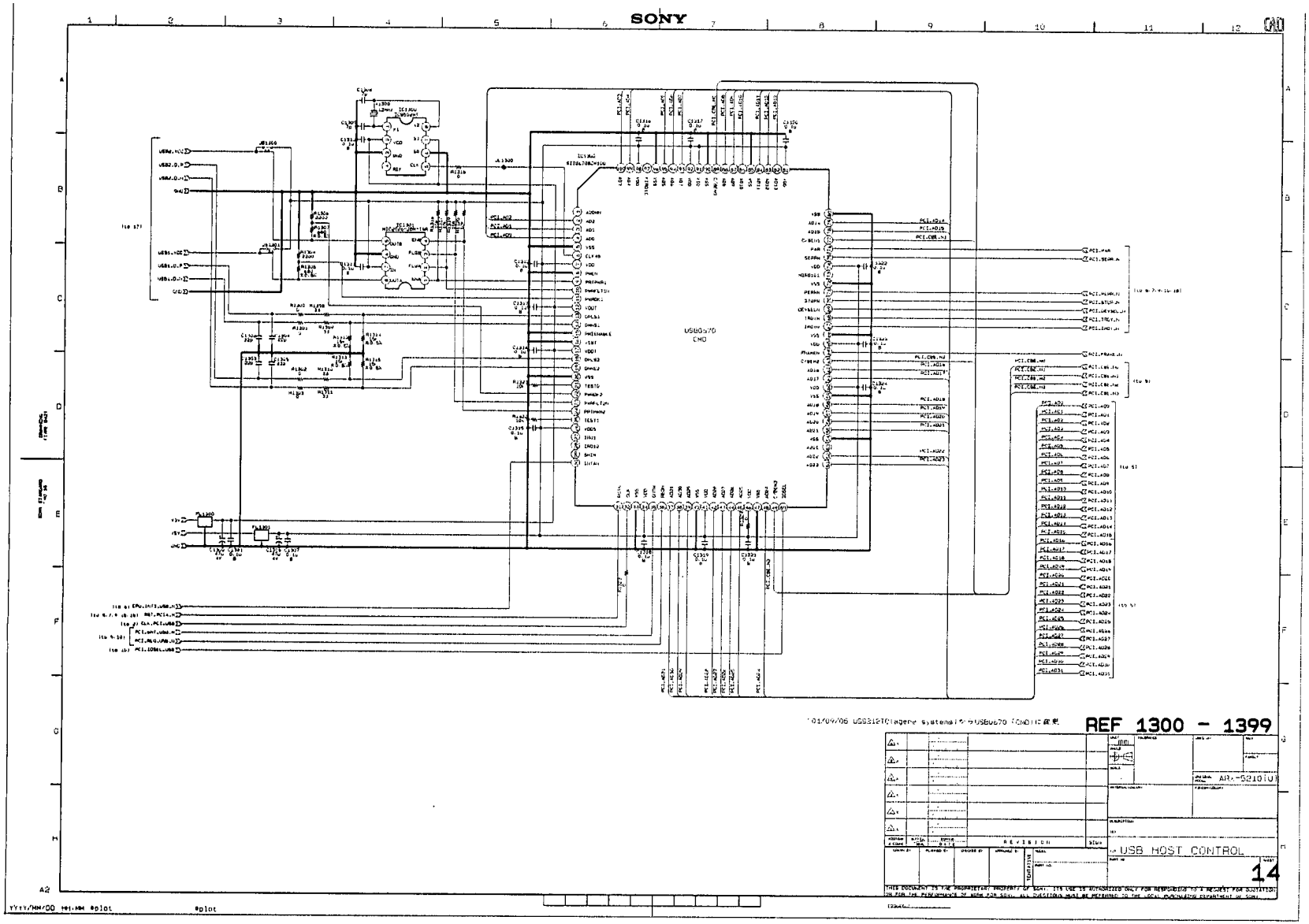
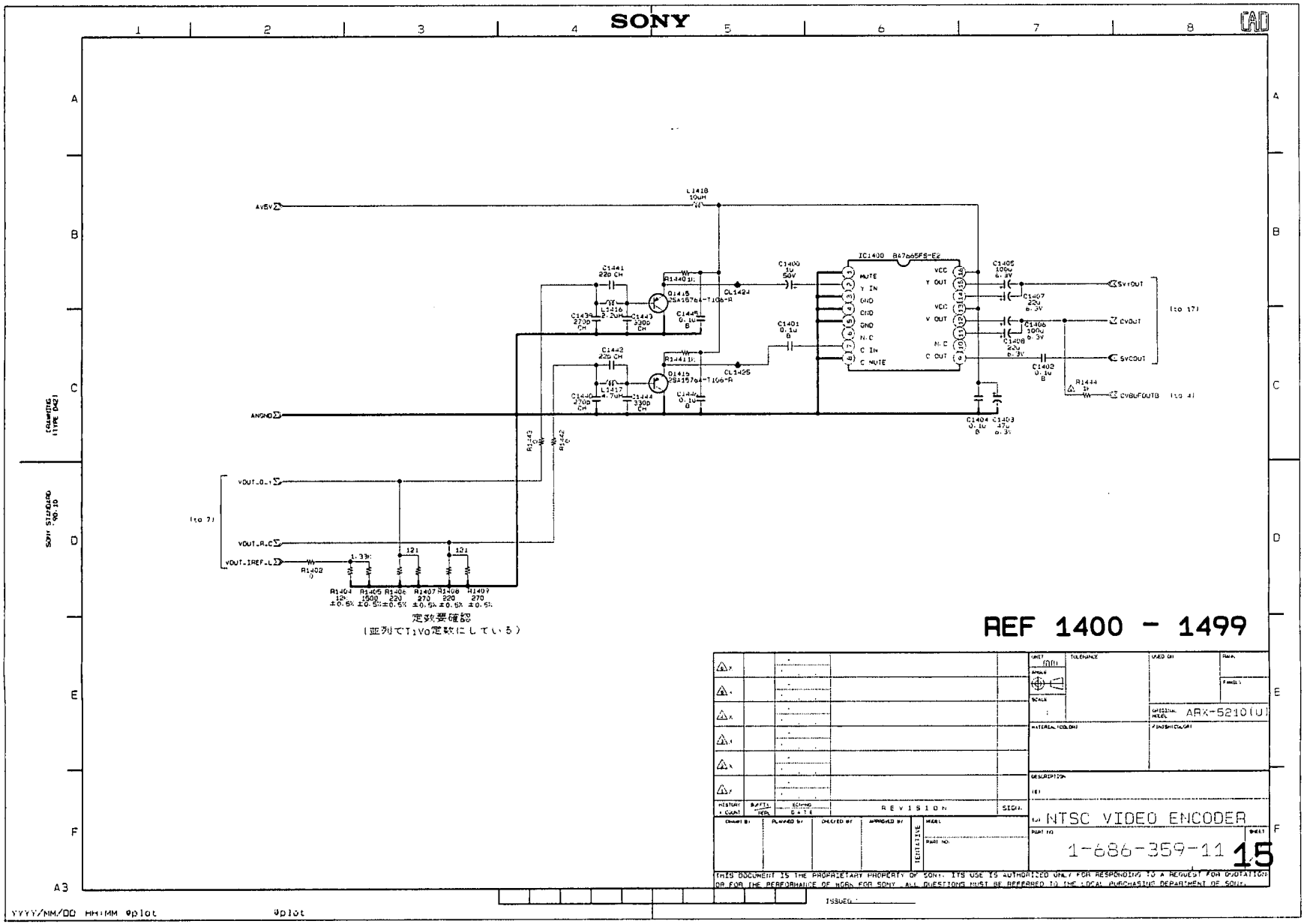
USB HOST CONTROL




SONY
CAD
REF 1400 - 1499
NTSC VIDEO ENCODER
1-686-359-11
15
ARK-5210(U)
IC1400 BA7665FS-E2
AVSV
ANGND
VOUT-G-Y
VOUT-R-C
VOUT-IREF-L
(to 7)
(to 17)
(to 41)
SvYOUT
CVOUT
SVCOUT
CVBLFOUTB
MUTE
Y IN
GND
CND
GND
N.C
C IN
C MUTE
VCC
Y OUT
VCC
V OUT
N.C
C OUT
定数要確認
(並列でT1VO定数にしている)
REVISION
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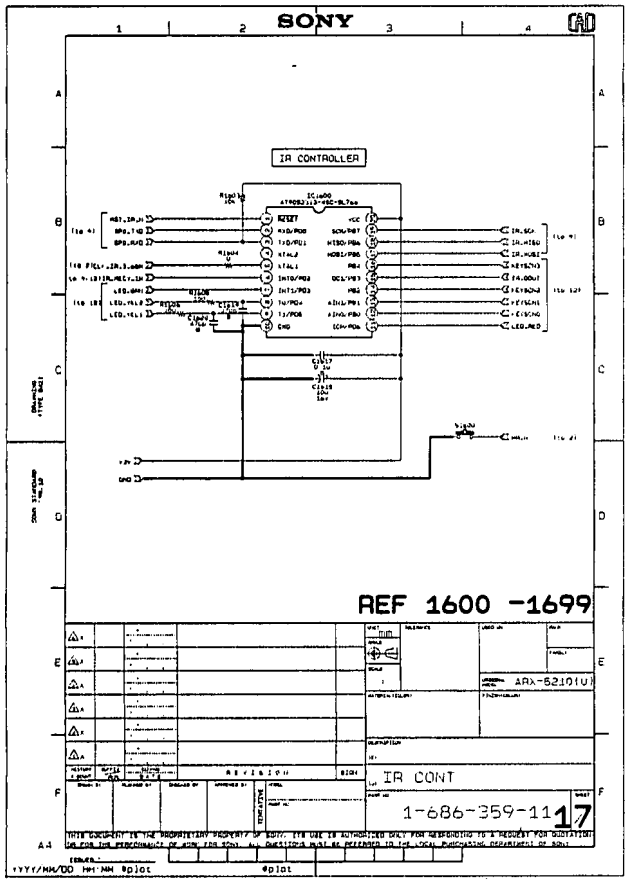
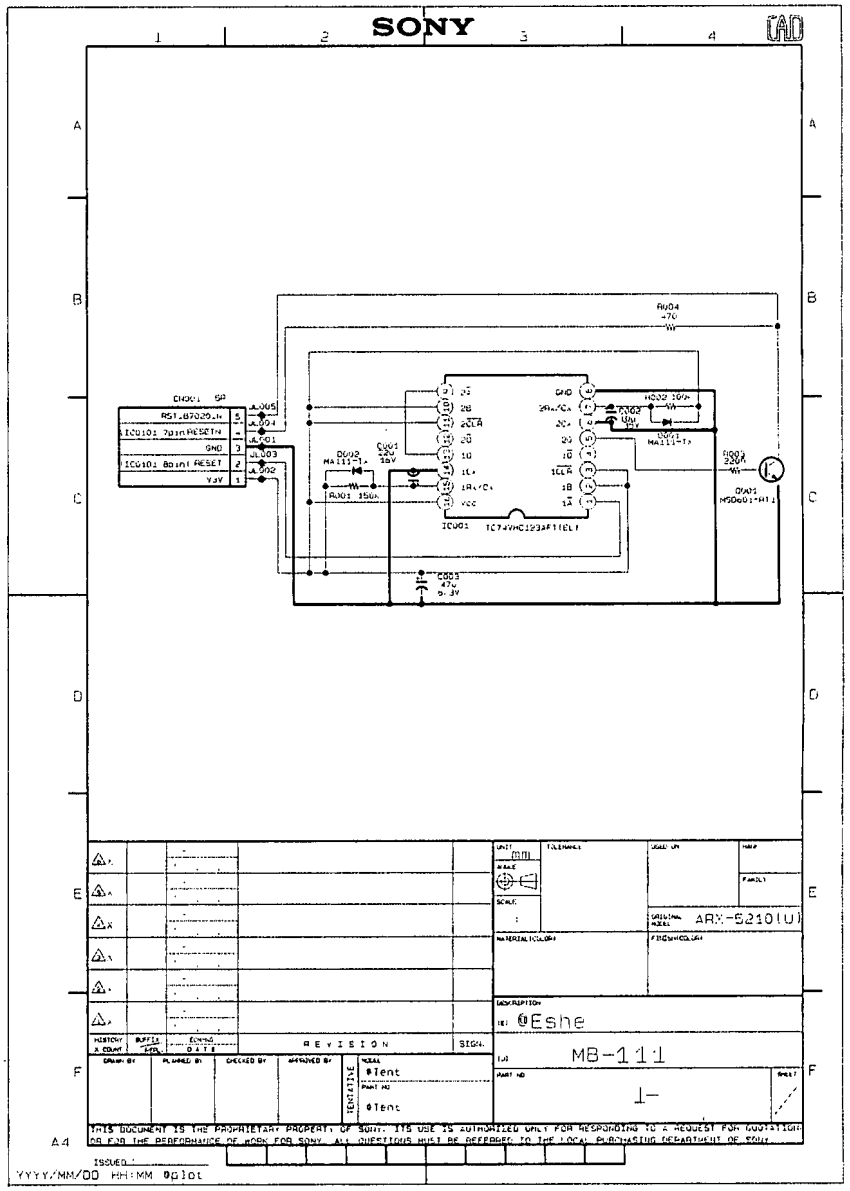
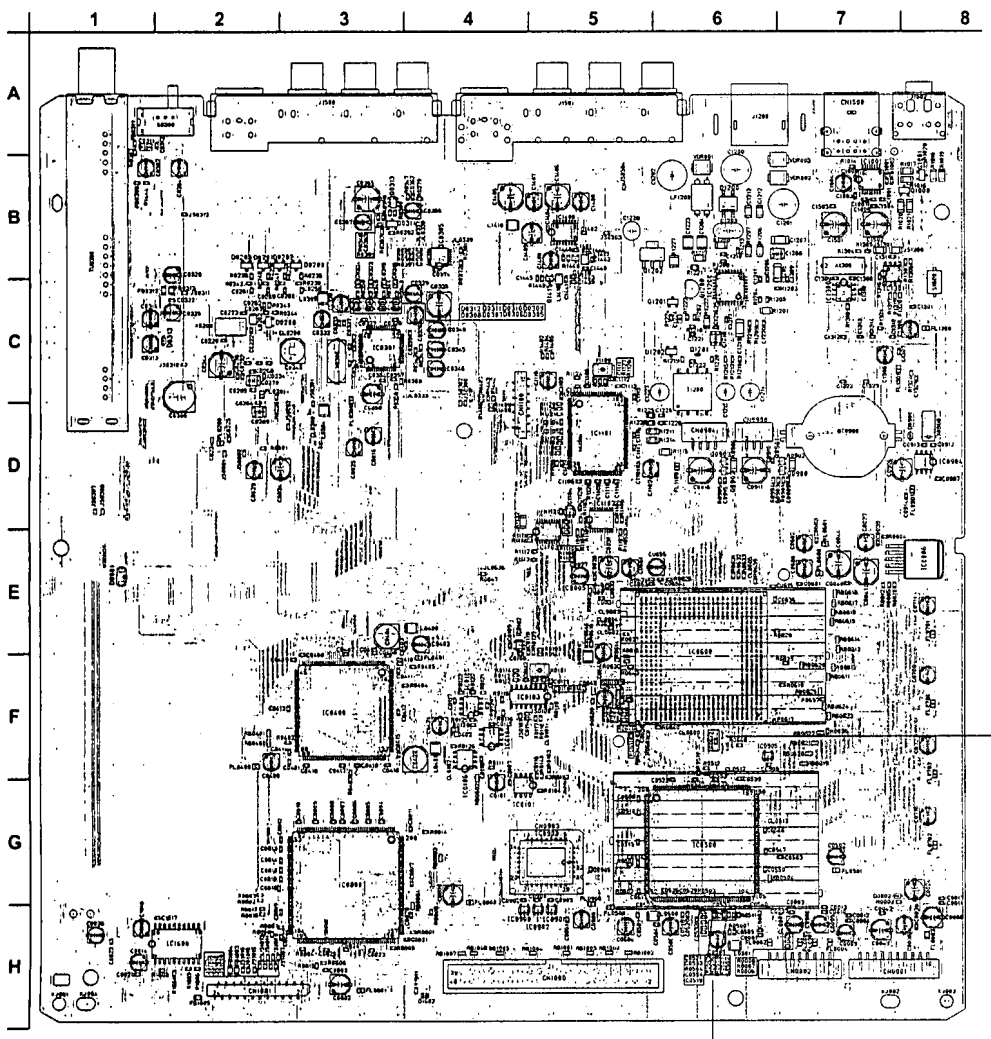

SONY
IR CONTROLLER
REF 1600 -1699
ARX-5210(U)
IR CONT
1-686-359-11
17


SONY
ARX-5210(U)
@Eshe
MB-111

MA-422 [MAIN BOARD]

COMPONENT SIDE

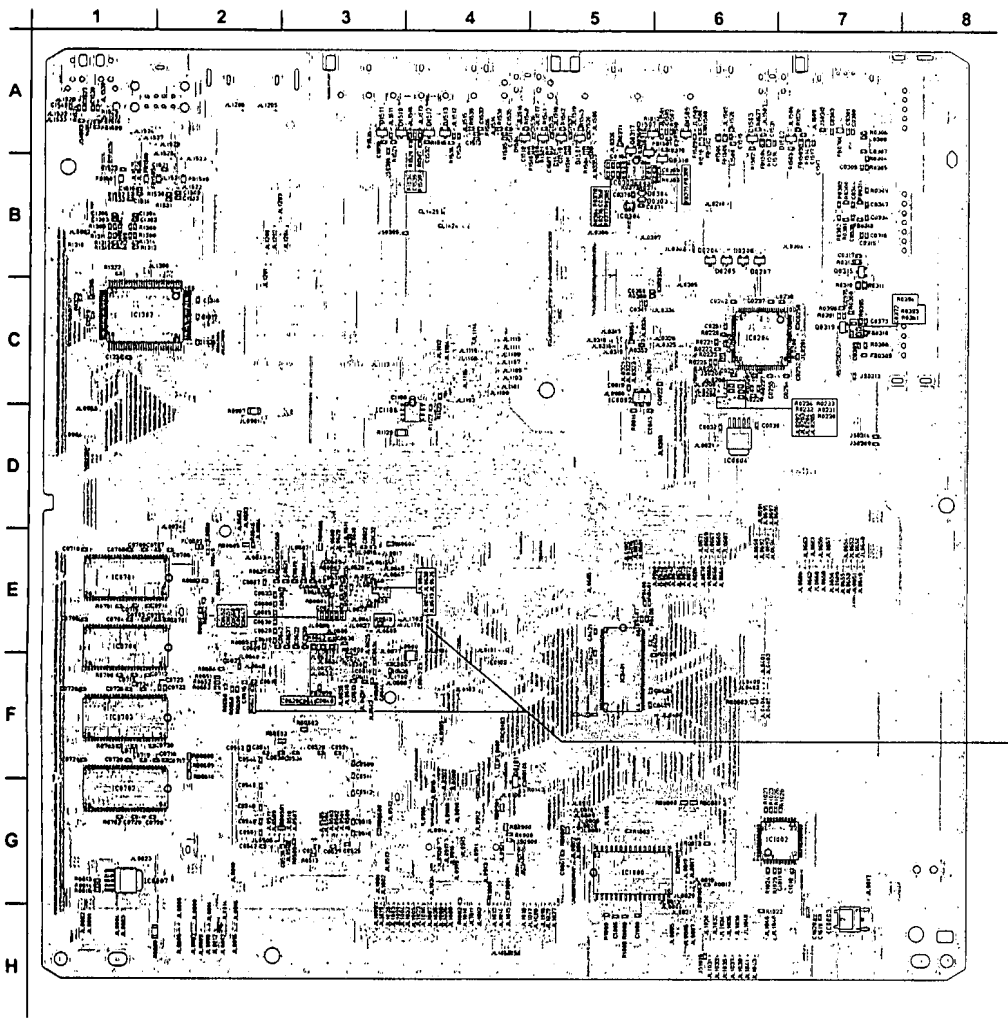


NOTE:
When replacing IC0600 make sure R0606, R0607, R0608, R0610, R0611 & R0612 remain properly mounted and positioned.

NOTE:
When replacing IC0500 make sure R0505 & R0508 remain properly mounted and positioned.

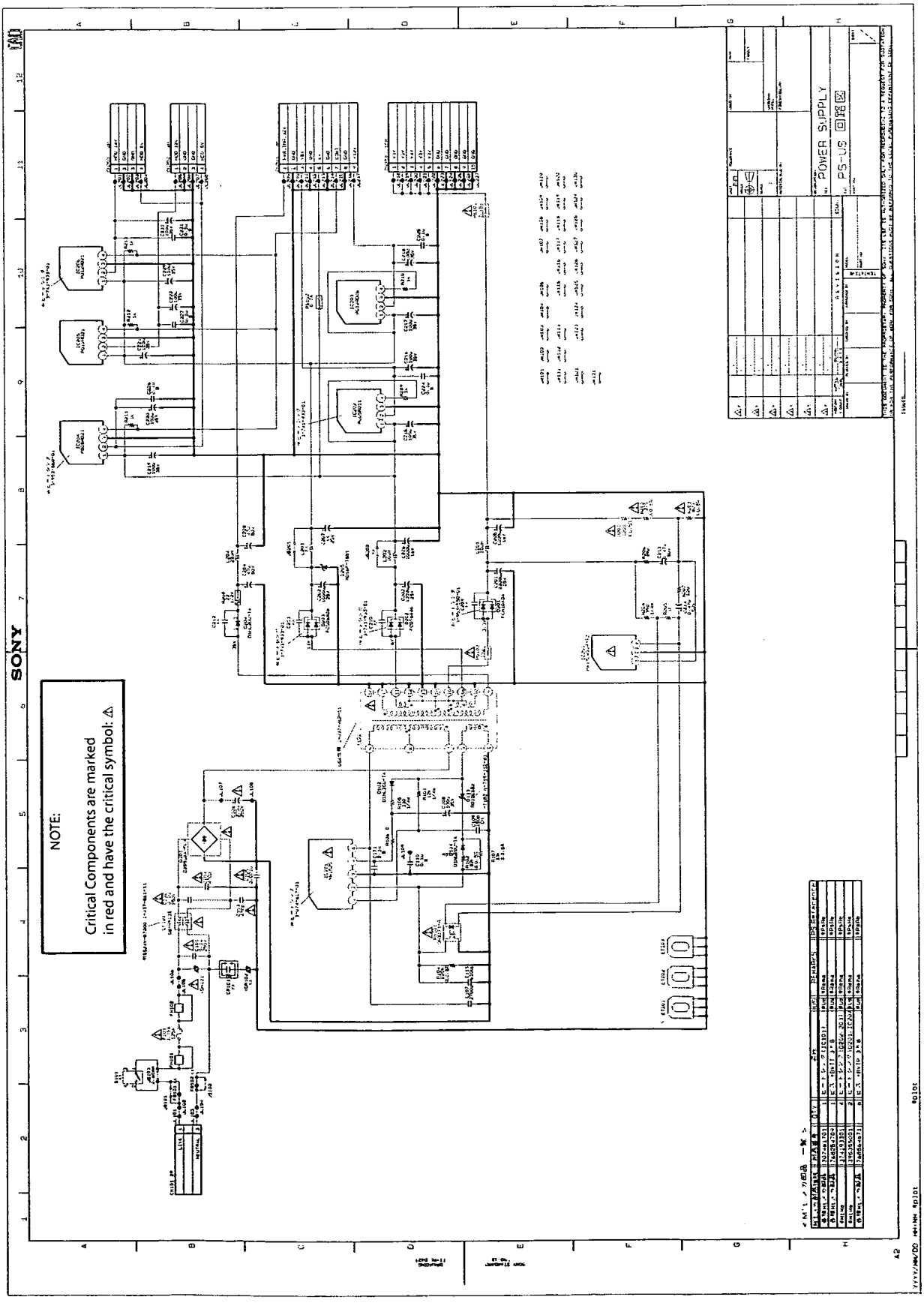
MA-422 [MAIN BOARD]

CONDUCTOR SIDE



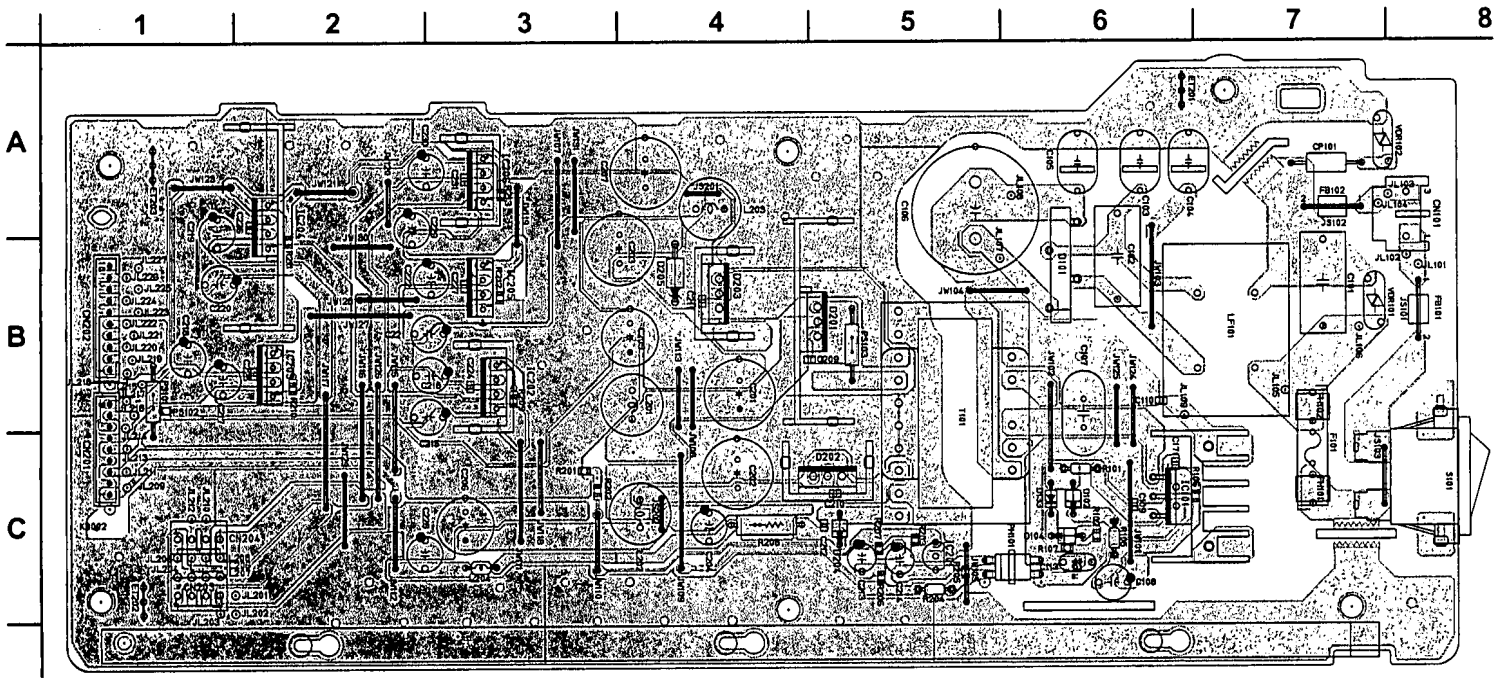
NOTE:
When replacing IC0600 make sure R0613, R0641 & R0642 remain properly mounted and positioned.

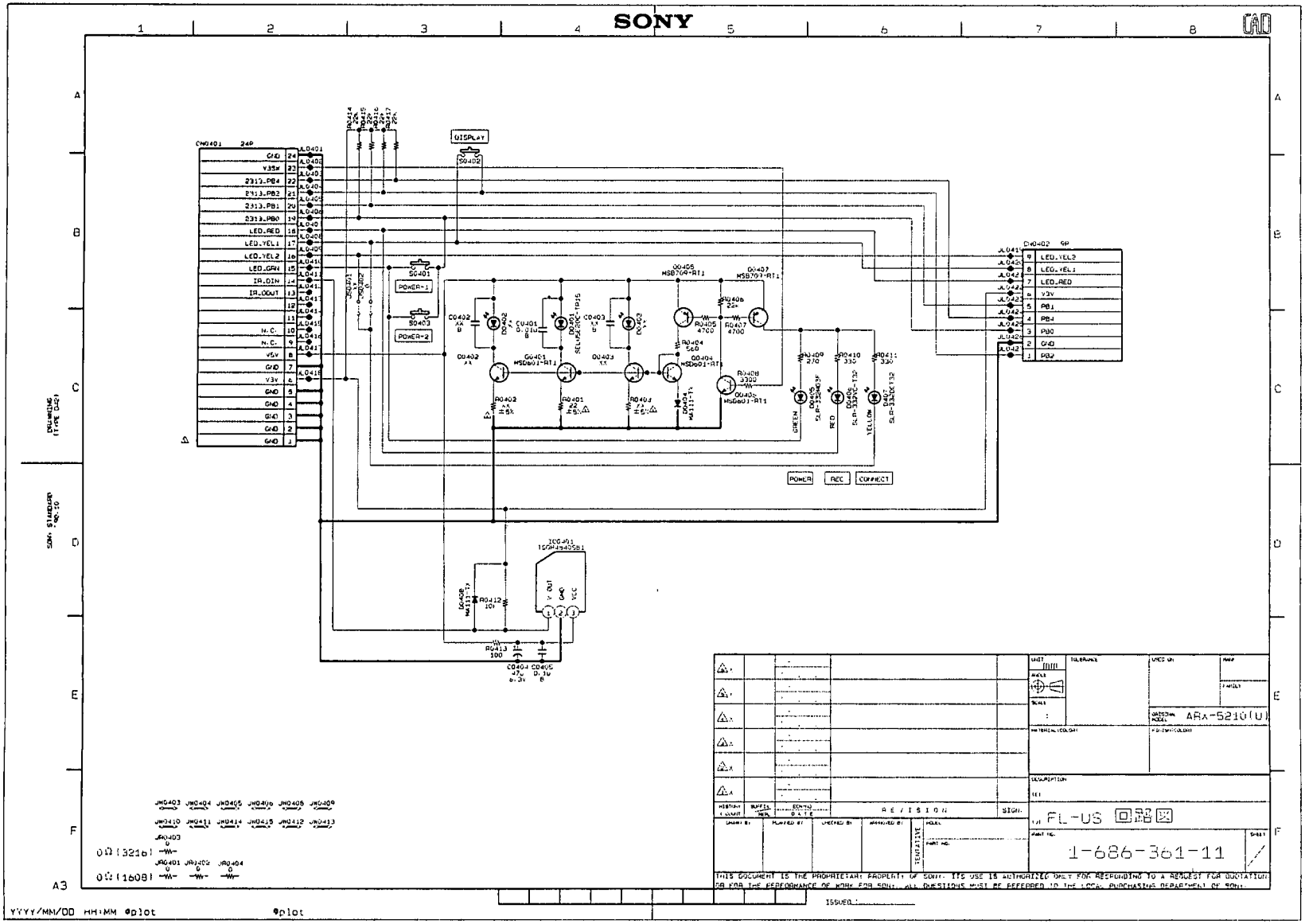
PS-449 BOARD SCHEMATIC DIAGRAM



PS-449 [SWITCHING REGULATOR]

COMPONENT SIDE




SONY
CN0401 24P
GND
V35V
2313.PB4
2313.PB3
2313.PB2
2313.PB1
2313.PB0
LED.RED
LED.YEL1
LED.YEL2
LED.GRN
IR.DIN
IR.DOUT
N.C.
N.C.
V5V
V3V
DISPLAY
S0402
S0401
POWER-1
S0403
POWER-2
CN0402 9P
LED.YEL2
LED.YEL1
LED.RED
V3V
PB1
PB0
GND
PB2
POWER
REC
CONNECT
ICC-J01
ISGM34M5081
ARX-5210(U)
FL-US
1-686-361-11
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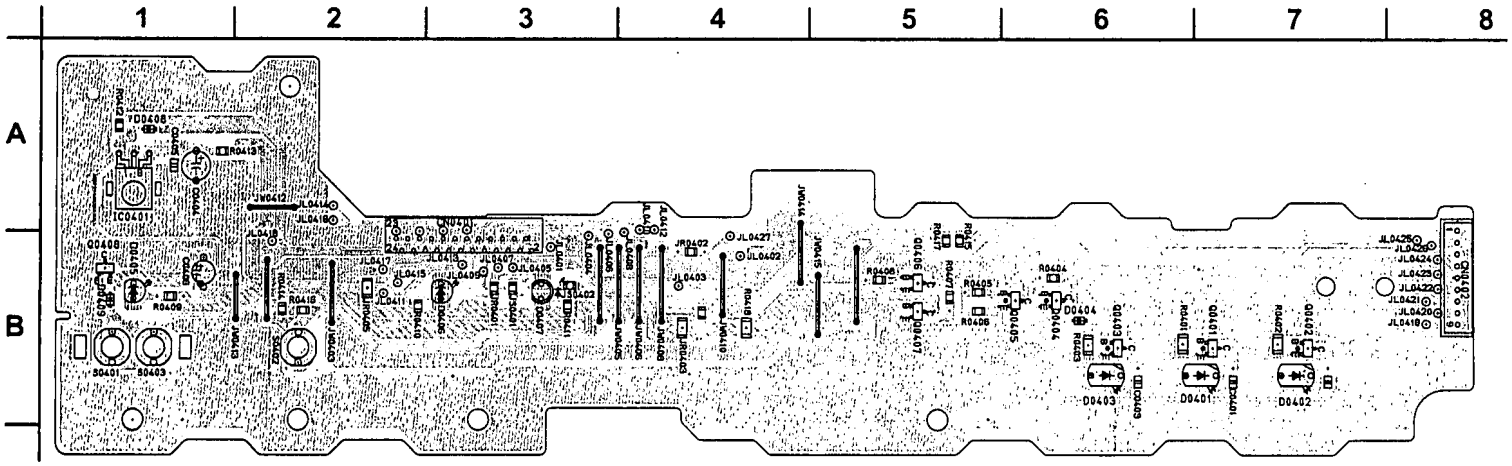
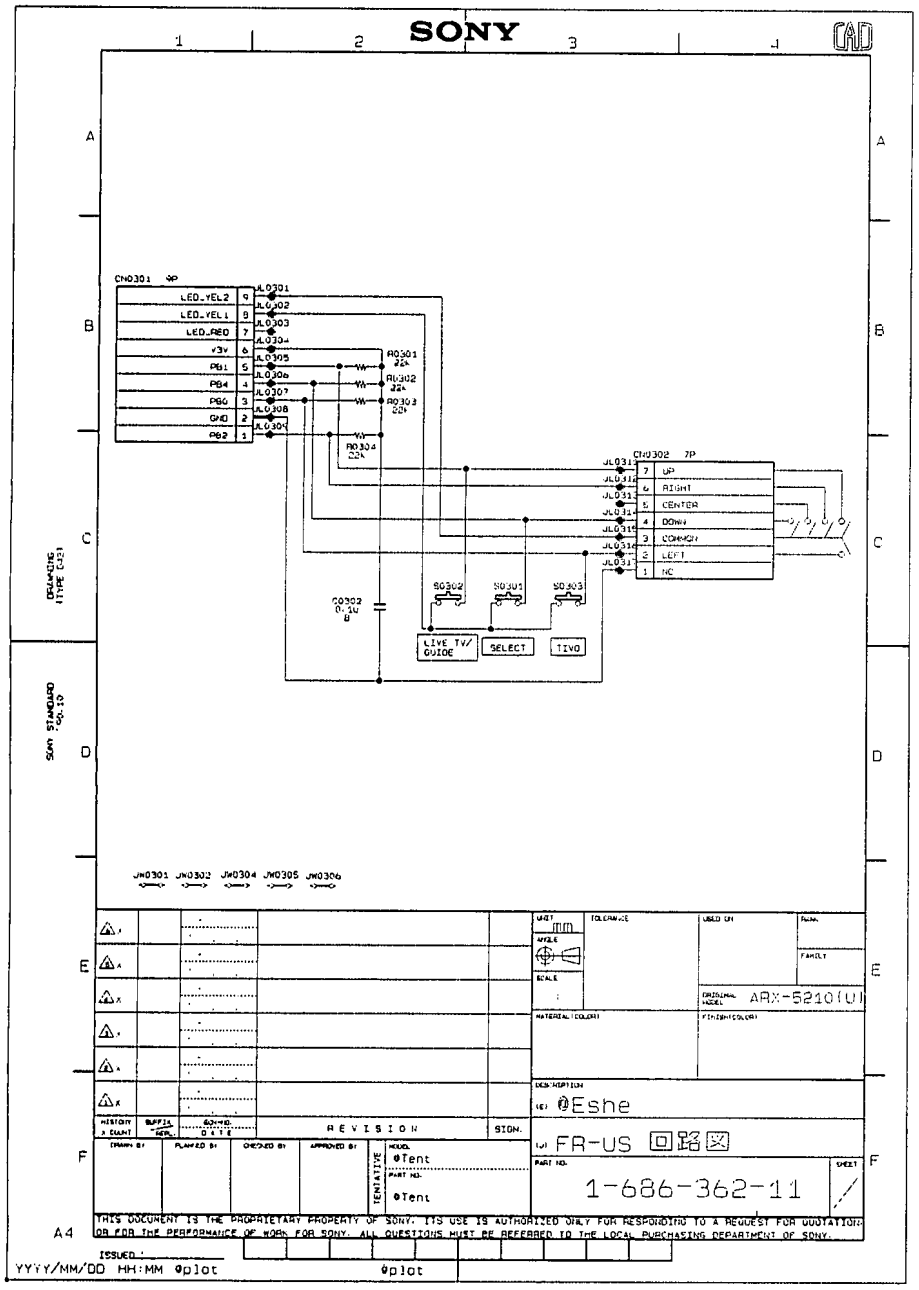
ISSUED:
A3

FL-134 [FUNCTION INDICATOR]

COMPONENT SIDE

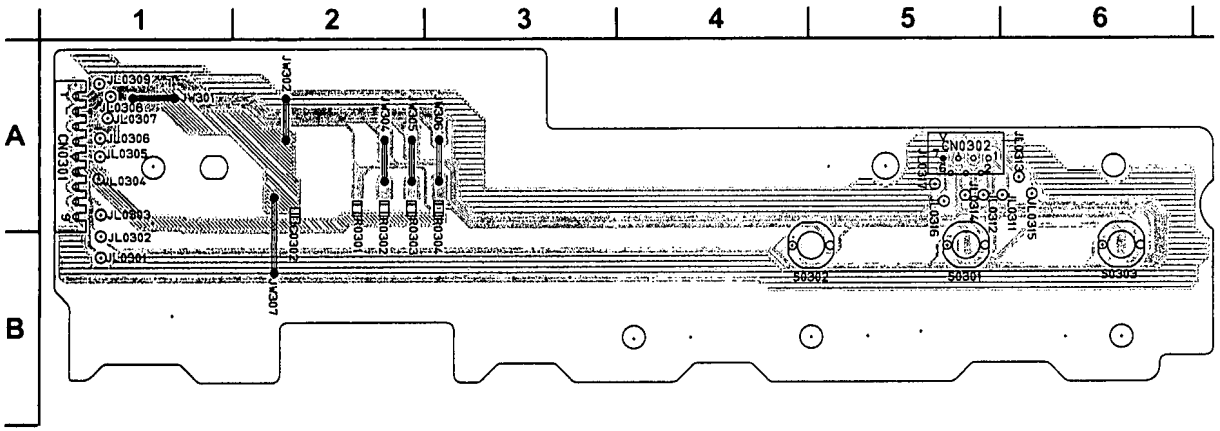


FR-134 BOARD SCHEMATIC DIAGRAM



FR-198 [FUNCTION KEY]

COMPONENT SIDE



SECTION 3: EXPLODED VIEWS

Components not identified by a part number or description are not stocked because they are seldom required for routine service.

The component parts of an assembly are indicated by the reference numbers in the far right column of the parts list and within the dotted lines of the diagram.

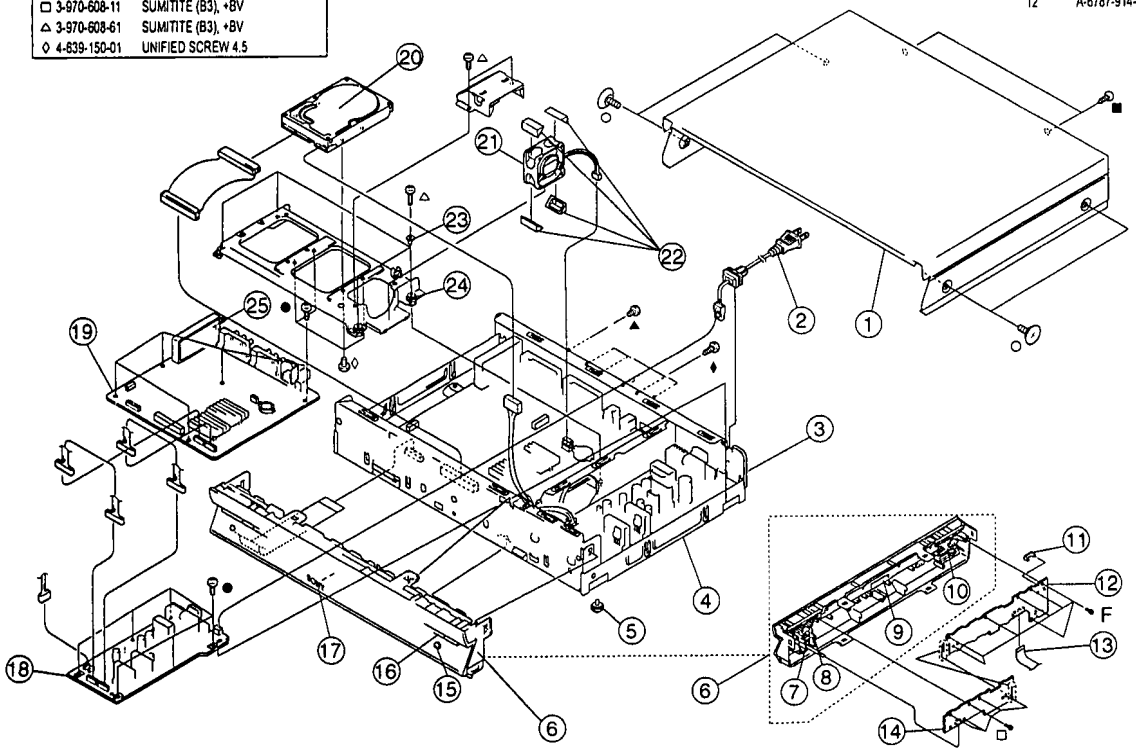
* Items marked with an asterisk are not stocked since they are seldom required for routine service. Expect some delay when ordering these components.

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

NOTE: Les composants identifies par un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

3-1. CHASSIS

●	3-058-511-11	+BV IBR
■	3-077-331-01	+BV3 (3-CR)
▲	4-951-620-71	SCREW (2.6)
♦	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3
○	3-070-883-11	SCREW, TAPPING
□	3-970-608-11	SUMITITE (B3), +BV
△	3-970-608-61	SUMITITE (B3), +BV
◇	4-639-150-01	UNIFIED SCREW 4.5



REF.NO.	PART NO.	DESCRIPTION	ASSEMBLY INCLUDES
1	3-074-858-01	CASE, UPPER	
⚠ 2	1-824-774-11	CORD, POWER	
3	3-078-359-01	PANEL (USA), BACK	
4	3-074-852-11	CHASSIS	
5	3-052-379-01	FOOT (AH)	
6	X-3952-845-1	PANEL ASSY, FRONT	(7-10)
7	3-074-873-01	SW HOLDER	
8	1-771-913-11	SWITCH, TACTILE	
9	3-074-870-11	LENS, CENTER	
10	X-3952-846-1	BUTTON (PW) ASSY	
11	3-075-986-02	PLATE, PUSH	
12	A-6787-914-A	FL-134 BOARD, MOUNTED	

REF.NO.	PART NO.	DESCRIPTION
* 13	1-824-773-11	CABLE, FLAT (FMF-002)
14	A-6787-915-A	FR-198 BOARD, MOUNTED
15	3-074-872-01	CAP, BUTTON
16	X-3952-847-1	BUTTON (MN) ASSY
17	4-969-961-11	EMBLEM (NO.4), SONY
18	A-6787-911-A	PS-449 BOARD, COMPLETE
19	A-6787-909-A	MA-422 BOARD, COMPLETE
20	1-796-676-11	DISK, HARD (80GB)
21	1-763-816-11	FAN, D.C.
22	3-074-851-01	DAMPER (FAN 25)
23	3-074-848-01	COLLAR (SY), FLANGE
24	3-074-849-01	DAMPER (SY)
25	1-693-597-11	TUNER

SECTION 4: ELECTRICAL PARTS LIST

MA-422

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

NOTE: Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

* Items marked with an asterisk are not stocked since they are seldom required for routine service. Expect some delay when ordering these components.

RESISTORS
- All resistors are in ohms
- F : nonflammable
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

When ordering parts by reference number, please include the board name.

MA-422

REF. NO.	PART NO.	DESCRIPTION	VALUES
*	A-6787-909-A	MA-422 BOARD, COMPLETE	
	1-528-174-11	BATTERY, LITHIUM (CR2032 TYPE)	
	3-075-711-01	HEAT SINK (IC)	
		LITHIUM BATTERY	
BT0900	1-756-076-21	HOLDER, LITHIUM BATTERY	
		CAPACITOR	
C0002	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0004	1-162-967-11	CERAMIC CHIP	0.0033µF 10% 50V
C0005	1-124-779-00	ELECT CHIP	10µF 20% 16V
C0006	1-124-779-00	ELECT CHIP	10µF 20% 16V
C0007	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0008	1-126-205-11	ELECT CHIP	47µF 20% 6.3V
C0009	1-128-996-11	ELECT CHIP	4.7µF 20% 50V
C0010	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0011	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0014	1-124-779-00	ELECT CHIP	10µF 20% 16V
C0016	1-124-779-00	ELECT CHIP	10µF 20% 16V
C0019	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0020	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0022	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0023	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0024	1-126-205-11	ELECT CHIP	47µF 20% 6.3V
C0025	1-124-779-00	ELECT CHIP	10µF 20% 16V
C0026	1-124-779-00	ELECT CHIP	10µF 20% 16V
C0027	1-124-779-00	ELECT CHIP	10µF 20% 16V
C0028	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0029	1-124-779-00	ELECT CHIP	10µF 20% 16V
C0030	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0031	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0032	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0033	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0034	1-126-205-11	ELECT CHIP	47µF 20% 6.3V
C0035	1-126-205-11	ELECT CHIP	47µF 20% 6.3V
C0036	1-124-779-00	ELECT CHIP	10µF 20% 16V
C0037	1-124-779-00	ELECT CHIP	10µF 20% 16V
C0038	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0039	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0040	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0041	1-126-246-11	ELECT CHIP	220µF 20% 4V
C0042	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0043	1-126-205-11	ELECT CHIP	47µF 20% 6.3V
C0045	1-127-715-91	CERAMIC CHIP	0.22µF 10% 16V
C0101	1-126-607-11	ELECT CHIP	47µF 20% 4V
C0103	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0107	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0108	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0111	1-162-909-11	CERAMIC CHIP	4pF 0.25pF 50V
C0112	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0113	1-162-909-11	CERAMIC CHIP	4pF 0.25pF 50V
C0114	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0115	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0116	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0117	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0139	1-124-778-00	ELECT CHIP	22µF 20% 6.3V
C0140	1-126-205-11	ELECT CHIP	47µF 20% 6.3V
C0141	1-124-779-00	ELECT CHIP	10µF 20% 16V
C0220	1-162-915-11	CERAMIC CHIP	10pF 0.50pF 50V
C0222	1-162-915-11	CERAMIC CHIP	10pF 0.50pF 50V
C0223	1-115-416-11	CERAMIC CHIP	0.001µF 5% 25V
C0224	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0225	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0231	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0232	1-165-176-11	CERAMIC CHIP	0.047µF 10% 16V
C0233	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C0234	1-165-176-11	CERAMIC CHIP	0.047µF 10% 16V
C0235	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V

MA-422

REF. NO.	PART NO.	DESCRIPTION	VALUES		
C0236	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0237	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0238	1-165-176-11	CERAMIC CHIP	0.047µF	10%	16V
C0242	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0244	1-126-206-11	ELECT CHIP	100µF	20%	6.3V
C0245	1-135-595-21	ELECT	100µF	20%	6.3V
C0250	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0251	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0252	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0253	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0254	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0255	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0256	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0257	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0258	1-165-176-11	CERAMIC CHIP	0.047µF	10%	16V
C0259	1-165-176-11	CERAMIC CHIP	0.047µF	10%	16V
C0261	1-165-176-11	CERAMIC CHIP	0.047µF	10%	16V
C0263	1-165-176-11	CERAMIC CHIP	0.047µF	10%	16V
C0264	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0265	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0268	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0269	1-110-569-11	TANTAL. CHIP	47µF	20%	6.3V
C0270	1-110-569-11	TANTAL. CHIP	47µF	20%	6.3V
C0300	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0302	1-124-779-00	ELECT CHIP	10µF	20%	16V
C0303	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0304	1-124-779-00	ELECT CHIP	10µF	20%	16V
C0305	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0306	1-128-398-11	ELECT CHIP	220µF	20%	16V
C0308	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0311	1-104-915-11	TANTAL. CHIP	2.2µF	20%	20V
C0312	1-115-416-11	CERAMIC CHIP	0.001µF	5%	25V
C0313	1-128-996-11	ELECT CHIP	4.7µF	20%	50V
C0314	1-128-996-11	ELECT CHIP	4.7µF	20%	50V
C0315	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0316	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0317	1-162-968-11	CERAMIC CHIP	0.0047µF	10%	50V
C0322	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0323	1-125-838-11	CERAMIC CHIP	2.2µF	10%	6.3V
C0324	1-125-838-11	CERAMIC CHIP	2.2µF	10%	6.3V
C0325	1-124-779-00	ELECT CHIP	10µF	20%	16V
C0326	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0327	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0328	1-124-779-00	ELECT CHIP	10µF	20%	16V
C0329	1-126-601-11	ELECT CHIP	2.2µF	20%	50V
C0330	1-126-601-11	ELECT CHIP	2.2µF	20%	50V
C0331	1-162-924-11	CERAMIC CHIP	56pF	5%	50V
C0332	1-126-601-11	ELECT CHIP	2.2µF	20%	50V
C0333	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0334	1-162-924-11	CERAMIC CHIP	56pF	5%	50V
C0335	1-126-204-11	ELECT CHIP	47µF	20%	16V
C0336	1-126-601-11	ELECT CHIP	2.2µF	20%	50V
C0337	1-162-967-11	CERAMIC CHIP	0.0033µF	10%	50V
C0339	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0340	1-126-601-11	ELECT CHIP	2.2µF	20%	50V
C0341	1-162-924-11	CERAMIC CHIP	56pF	5%	50V
C0342	1-162-909-11	CERAMIC CHIP	4pF	0.25pF	50V
C0343	1-162-909-11	CERAMIC CHIP	4pF	0.25pF	50V
C0345	1-124-779-00	ELECT CHIP	10µF	20%	16V
C0346	1-124-779-00	ELECT CHIP	10µF	20%	16V
C0347	1-162-924-11	CERAMIC CHIP	56pF	5%	50V
C0354	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0357	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C0358	1-126-205-11	ELECT CHIP	47µF	20%	6.3V
C0360	1-162-924-11	CERAMIC CHIP	56pF	5%	50V
C0362	1-115-416-11	CERAMIC CHIP	0.001µF	5%	25V
C0363	1-115-416-11	CERAMIC CHIP	0.001µF	5%	25V
C0364	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0365	1-126-204-11	ELECT CHIP	47µF	20%	16V
C0366	1-124-779-00	ELECT CHIP	10µF	20%	16V
C0367	1-124-779-00	ELECT CHIP	10µF	20%	16V
C0368	1-162-923-11	CERAMIC CHIP	47pF	5%	50V
C0369	1-162-923-11	CERAMIC CHIP	47pF	5%	50V
C0370	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0371	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0372	1-162-927-11	CERAMIC CHIP	100pF	5%	50V
C0373	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0374	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0375	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0400	1-126-607-11	ELECT CHIP	47µF	20%	4V
C0401	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0402	1-126-607-11	ELECT CHIP	47µF	20%	4V
C0403	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0404	1-135-600-21	ELECT	22µF	20%	20V
C0405	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V

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REF. NO.	PART NO.	DESCRIPTION	VALUES		
C0406	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0407	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0408	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0409	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0410	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0411	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0412	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0413	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0414	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0415	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0416	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0417	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0418	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0419	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0420	1-135-600-21	ELECT	22µF	20%	20V
C0421	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0422	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0423	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0424	1-126-607-11	ELECT CHIP	47µF	20%	4V
C0425	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0426	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0427	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0500	1-124-779-00	ELECT CHIP	10µF	20%	16V
C0501	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0502	1-124-779-00	ELECT CHIP	10µF	20%	16V
C0503	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0504	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0505	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0506	1-124-779-00	ELECT CHIP	10µF	20%	16V
C0507	1-124-779-00	ELECT CHIP	10µF	20%	16V
C0508	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0509	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0510	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0511	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0512	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0513	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0514	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0515	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0516	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0517	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0518	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0519	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0520	1-162-927-11	CERAMIC CHIP	100pF	5%	50V
C0521	1-162-927-11	CERAMIC CHIP	100pF	5%	50V
C0522	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0523	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0524	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0525	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0526	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0527	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0528	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0529	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0530	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0531	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0532	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C0533	1-162-923-11	CERAMIC CHIP	47pF	5%	50V
C0534	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0535	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0536	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0537	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0538	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0539	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0540	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0541	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0542	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0543	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0544	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0545	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0546	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0547	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0548	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0549	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0550	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0551	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0552	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C0553	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C0554	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0600	1-126-607-11	ELECT CHIP	47µF	20%	4V
C0601	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0602	1-126-607-11	ELECT CHIP	47µF	20%	4V
C0603	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0604	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0605	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0606	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0607	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V

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REF. NO.	PART NO.	DESCRIPTION	VALUES		
C0608	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0609	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0610	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0611	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0612	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0613	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0614	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0615	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0616	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0617	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0618	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0619	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0620	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0621	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0622	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0623	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0624	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0625	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0626	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0627	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0628	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0629	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0630	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0631	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0632	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0633	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0634	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0635	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0636	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0637	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0638	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0639	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0640	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0641	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0642	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0643	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0644	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0645	1-126-607-11	ELECT CHIP	47µF	20%	4V
C0646	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0647	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0648	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0649	1-126-607-11	ELECT CHIP	47µF	20%	4V
C0650	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V

REF. NO.	PART NO.	DESCRIPTION	VALUES		
C0651	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0652	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0653	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0654	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0655	1-124-779-00	ELECT CHIP	10µF	20%	16V
C0658	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0659	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0660	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0661	1-126-607-11	ELECT CHIP	47µF	20%	4V
C0700	1-126-607-11	ELECT CHIP	47µF	20%	4V
C0701	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0702	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0703	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0704	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0705	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0706	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0707	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0708	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0709	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0710	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0711	1-126-607-11	ELECT CHIP	47µF	20%	4V
C0712	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0713	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0714	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0715	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0716	1-126-607-11	ELECT CHIP	47µF	20%	4V
C0717	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0718	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0719	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0720	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0721	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0722	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0723	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0724	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0725	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0726	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0727	1-126-607-11	ELECT CHIP	47µF	20%	4V
C0728	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0729	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0730	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0731	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0800	1-126-205-11	ELECT CHIP	47µF	20%	6.3V

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

NOTE: Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

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REF. NO.	PART NO.	DESCRIPTION	VALUES		
C0801	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0802	1-126-205-11	ELECT CHIP	47µF	20%	6.3V
C0803	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0804	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0805	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0806	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0807	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0808	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0809	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0810	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0811	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0812	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0813	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0814	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0815	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0816	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0817	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0818	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0819	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0820	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0821	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0822	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0823	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0824	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0825	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0900	1-126-607-11	ELECT CHIP	47µF	20%	4V
C0901	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0902	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0903	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0904	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0905	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0906	1-126-205-11	ELECT CHIP	47µF	20%	6.3V
C0907	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0908	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0909	1-125-837-91	CERAMIC CHIP	1µF	10%	6.3V
C0910	1-162-967-11	CERAMIC CHIP	0.0033µF	10%	50V
C0912	1-162-909-11	CERAMIC CHIP	4pF	0.25pF	50V
C0913	1-162-909-11	CERAMIC CHIP	4pF	0.25pF	50V
C0914	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1001	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1003	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1004	1-126-607-11	ELECT CHIP	47µF	20%	4V
C1007	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1008	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1009	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1010	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1100	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1101	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1102	1-124-779-00	ELECT CHIP	10µF	20%	16V
C1103	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1104	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1105	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1106	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1107	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1108	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1109	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1110	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1111	1-162-917-11	CERAMIC CHIP	15pF	5%	50V
C1112	1-162-918-11	CERAMIC CHIP	18pF	5%	50V
C1113	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1114	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1115	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1116	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1117	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1118	1-124-779-00	ELECT CHIP	10µF	20%	16V
⚠ C1201	1-113-915-11	CERAMIC	0.001µF	20%	250V
⚠ C1202	1-113-915-11	CERAMIC	0.001µF	20%	250V
C1203	1-107-824-41	CERAMIC	220pF	5%	1KV
C1204	1-137-723-21	CERAMIC CHIP	0.047µF	10%	250V
C1205	1-135-965-21	CERAMIC CHIP	1000pF	10%	250V
C1206	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1207	1-135-965-21	CERAMIC CHIP	1000pF	10%	250V
C1208	1-104-913-11	TANTAL. CHIP	10µF	20%	16V
C1209	1-162-927-11	CERAMIC CHIP	100pF	5%	50V
C1210	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1211	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1212	1-135-788-21	CERAMIC CHIP	0.033µF	10%	250V
C1213	1-135-788-21	CERAMIC CHIP	0.033µF	10%	250V
C1214	1-109-842-11	CERAMIC	10pF	5%	2KV
C1215	1-109-842-11	CERAMIC	10pF	5%	2KV
C1216	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1217	1-162-909-11	CERAMIC CHIP	4pF	0.25pF	50V
C1218	1-104-913-11	TANTAL. CHIP	10µF	20%	16V
C1219	1-135-965-21	CERAMIC CHIP	1000pF	10%	250V
C1220	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V

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REF. NO.	PART NO.	DESCRIPTION	VALUES		
C1221	1-162-927-11	CERAMIC CHIP	100pF	5%	50V
C1222	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C1223	1-137-723-21	CERAMIC CHIP	0.047µF	10%	250V
C1225	1-162-925-11	CERAMIC CHIP	68pF	5%	50V
C1226	1-162-925-11	CERAMIC CHIP	68pF	5%	50V
C1300	1-126-607-11	ELECT CHIP	47µF	20%	4V
C1301	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1302	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C1303	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C1304	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C1305	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C1306	1-126-607-11	ELECT CHIP	47µF	20%	4V
C1307	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1308	1-162-912-11	CERAMIC CHIP	7pF	0.50pF	50V
C1309	1-162-912-11	CERAMIC CHIP	7pF	0.50pF	50V
C1310	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1311	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1312	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1313	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1314	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1315	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1316	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1317	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1318	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1319	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1320	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1321	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1322	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1323	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1324	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1400	1-126-193-11	ELECT CHIP	1µF	20%	50V
C1401	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1402	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1403	1-126-205-11	ELECT CHIP	47µF	20%	6.3V
C1404	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1405	1-126-206-11	ELECT CHIP	100µF	20%	6.3V
C1406	1-126-206-11	ELECT CHIP	100µF	20%	6.3V
C1407	1-124-778-00	ELECT CHIP	22µF	20%	6.3V
C1408	1-124-778-00	ELECT CHIP	22µF	20%	6.3V
C1439	1-164-388-91	CERAMIC CHIP	270pF	5%	50V
C1440	1-164-388-91	CERAMIC CHIP	270pF	5%	50V
C1441	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C1442	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C1443	1-162-959-11	CERAMIC CHIP	330pF	5%	50V
C1444	1-162-959-11	CERAMIC CHIP	330pF	5%	50V
C1445	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1446	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1500	1-162-927-11	CERAMIC CHIP	100pF	5%	50V
C1501	1-126-206-11	ELECT CHIP	100µF	20%	6.3V
C1502	1-126-206-11	ELECT CHIP	100µF	20%	6.3V
C1503	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1504	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1505	1-162-927-11	CERAMIC CHIP	100pF	5%	50V
C1506	1-162-927-11	CERAMIC CHIP	100pF	5%	50V
C1509	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C1510	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C1513	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C1514	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C1521	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C1522	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C1525	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C1526	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C1527	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C1528	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C1529	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C1531	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C1532	1-162-959-11	CERAMIC CHIP	330pF	5%	50V
C1533	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C1534	1-162-959-11	CERAMIC CHIP	330pF	5%	50V
C1535	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C1536	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C1537	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C1538	1-162-959-11	CERAMIC CHIP	330pF	5%	50V
C1539	1-162-959-11	CERAMIC CHIP	330pF	5%	50V
C1540	1-162-967-11	CERAMIC CHIP	0.0033µF	10%	50V
C1617	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C1618	1-124-779-00	ELECT CHIP	10µF	20%	16V
C1619	1-162-962-11	CERAMIC CHIP	470pF	10%	50V
C1620	1-162-962-11	CERAMIC CHIP	470pF	10%	50V

CONNECTOR

CN0001	1-816-466-21	PIN, CONNECTOR 10P
CN0002	1-816-296-21	PIN, CONNECTOR (PC BOARD) 9P
CN0900	1-794-509-11	PIN, CONNECTOR (PC BOARD) (3P)
CN0903	1-540-151-21	SOCKET, IC
CN1001	1-816-498-21	CONNECTOR, FFC/FPC 24P
* CN1500	1-784-011-11	CONNECTOR, USB (AX2)

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REF. NO.	PART NO.	DESCRIPTION	VALUES
	DIODE		
D0001	8-719-078-04	DIODE	EC31QS03L-TE12L
D0002	8-719-988-61	DIODE	1SS355TE-17
D0139	8-719-404-50	DIODE	MA111-TX
D0140	8-719-404-50	DIODE	MA111-TX
D0200	8-719-056-17	DIODE	RD6.2MW-T1B
D0201	8-719-056-17	DIODE	RD6.2MW-T1B
D0203	8-719-056-17	DIODE	RD6.2MW-T1B
D0303	8-719-404-50	DIODE	MA111-TX
D0304	8-719-404-50	DIODE	MA111-TX
D0311	8-719-988-61	DIODE	1SS355TE-17
D0312	8-719-988-61	DIODE	1SS355TE-17
D0313	8-719-018-12	DIODE	MA8330
D0900	8-719-988-61	DIODE	1SS355TE-17
D1002	8-719-060-99	DIODE	SML-210MT-T86
D1200	8-719-050-65	DIODE	S1ZB60
D1201	8-719-056-48	DIODE	1SS388(TPL3)
D1202	8-719-401-53	DIODE	MA3056H-TX
D1500	8-719-421-59	DIODE	MA3130WA-TX
D1501	8-719-421-59	DIODE	MA3130WA-TX
D1502	8-719-421-59	DIODE	MA3130WA-TX
D1503	8-719-421-59	DIODE	MA3130WA-TX
D1504	8-719-421-59	DIODE	MA3130WA-TX
D1505	8-719-421-59	DIODE	MA3130WA-TX
	FERRITE BEAD		
FB0306	1-469-324-21	FERRITE	0μH
FB0308	1-414-228-11	FERRITE	0μH
FB0309	1-414-228-11	FERRITE	0μH
FB0310	1-414-228-11	FERRITE	0μH
FB0311	1-414-228-11	FERRITE	0μH
FB0312	1-469-324-21	FERRITE	0μH
FB0313	1-469-324-21	FERRITE	0μH
FB0314	1-414-228-11	FERRITE	0μH
FB0315	1-414-228-11	FERRITE	0μH
FB0600	1-469-836-21	FERRITE	0μH
FB1001	1-414-228-11	FERRITE	0μH
FB1002	1-414-228-11	FERRITE	0μH
FB1003	1-469-324-21	FERRITE	0μH
FB1004	1-469-324-21	FERRITE	0μH
FB1005	1-469-324-21	FERRITE	0μH
FB1500	1-414-553-11	FERRITE	0μH
FB1501	1-500-283-11	FERRITE	0μH
FB1502	1-500-283-11	FERRITE	0μH
FB1503	1-414-553-11	FERRITE	0μH
FB1504	1-414-553-11	FERRITE	0μH
FB1505	1-469-324-21	FERRITE	0μH
FB1506	1-469-324-21	FERRITE	0μH
FB1507	1-469-324-21	FERRITE	0μH
FB1508	1-469-324-21	FERRITE	0μH
FB1509	1-414-228-11	FERRITE	0μH
FB1510	1-414-228-11	FERRITE	0μH
	FILTER		
FL0001	1-234-177-21	FERRITE	0μH
FL0002	1-234-128-21	FERRITE	0μH
FL0003	1-234-494-21	FILTER, EMI REMOVAL (SMD)	
FL0004	1-234-123-21	FERRITE	0μH
FL0005	1-234-177-21	FERRITE	0μH
FL0100	1-234-177-21	FERRITE	0μH
FL0200	1-234-177-21	FERRITE	0μH
FL0201	1-234-177-21	FERRITE	0μH
FL0300	1-234-177-21	FERRITE	0μH
FL0400	1-234-177-21	FERRITE	0μH
FL0401	1-234-177-21	FERRITE	0μH
FL0402	1-234-177-21	FERRITE	0μH
FL0500	1-234-177-21	FERRITE	0μH
FL0501	1-234-177-21	FERRITE	0μH
FL0600	1-234-177-21	FERRITE	0μH
FL0601	1-234-177-21	FERRITE	0μH
FL0602	1-234-177-21	FERRITE	0μH
FL0700	1-234-177-21	FERRITE	0μH
FL0701	1-234-177-21	FERRITE	0μH
FL0702	1-234-177-21	FERRITE	0μH
FL0703	1-234-177-21	FERRITE	0μH
FL0800	1-234-177-21	FERRITE	0μH
FL0801	1-234-177-21	FERRITE	0μH
FL0900	1-234-177-21	FERRITE	0μH
FL0901	1-234-177-21	FERRITE	0μH
FL1100	1-234-177-21	FERRITE	0μH
FL1300	1-234-177-21	FERRITE	0μH
FL1301	1-234-177-21	FERRITE	0μH
	IC		
IC0002	6-702-619-01	IC	NJM2370U08-TE1
IC0003	8-759-157-17	IC	PQ05SZ1U

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REF. NO.	PART NO.	DESCRIPTION	VALUES
IC0004	8-759-679-48	IC	PQ3DZ13U
IC0005	6-702-302-01	IC	TK11133CSCL-G
IC0006	6-702-381-01	IC	SI-3011ZD-TL
IC0007	8-749-015-18	IC	PQ07VZ012ZP
IC0101	6-702-198-01	IC	MAX708TCSA-TG068
IC0102	8-759-585-51	IC	SN74AHC1G32DBVR
IC0103	6-702-177-01	IC	MK2745-26STR
IC0104	6-702-187-01	IC	ICS502MT
IC0105	8-759-680-53	IC	ICS9112AM-16-ER
IC0106	6-702-187-01	IC	ICS502MT
IC0107	8-759-523-97	IC	TC74VHC123AFT(EL)
IC0204	8-759-676-15	IC	SAA7114H
IC0301	6-702-188-01	IC	MSP4448G-FH-A2
IC0303	8-759-357-68	IC	NJM2115M-TE2
IC0304	8-759-649-28	IC	SN74AHC1G04DBVR
IC0305	8-759-669-44	IC	SN74LVC74APWR-12
IC0400	6-702-192-01	IC	BCM7040KQL
IC0401	6-703-430-01	IC	MT48LC2M32B2TG-6-Y94W
IC0500	6-702-189-01	IC	UPD30541GD-200-WML
IC0700	8-759-589-36	IC	MB81F641642C-103LFN-B
IC0701	8-759-589-36	IC	MB81F641642C-103LFN-B
IC0702	8-759-589-36	IC	MB81F641642C-103LFN-B
IC0703	8-759-589-36	IC	MB81F641642C-103LFN-B
IC0800	6-702-178-01	IC	UPD65948GD-131-LML
IC0900	8-759-649-28	IC	SN74AHC1G04DBVR
IC0901	8-759-585-51	IC	SN74AHC1G32DBVR
IC0902	8-759-585-51	IC	SN74AHC1G32DBVR
* IC0903	8-759-684-98	IC	SST39VF040-70-4C-NH
IC0904	6-702-186-01	IC	M41T56M6TR
IC0905	6-702-197-01	IC	TC74A5-3.3VCT
IC1001	8-759-484-69	IC	MAX3221CAE-TE2
IC1002	6-802-579-01	IC	AT90SC6464C
IC1101	8-749-019-23	IC	CX88168-11
IC1200	8-749-019-24	IC	20463-11
IC1300	6-702-187-01	IC	ICS502MT
IC1301	6-702-024-01	IC	MIC2026-2BM-T&R
IC1302	6-702-193-01	IC	SII0670BCM100
IC1400	8-759-662-95	IC	BA7665FS-E2
IC1600	6-801-554-01	IC	AT90S2313-4SC-SL766

JACK

J1200	1-766-250-11	JACK, MODULAR (2C) 6P	
* J1500	1-817-090-11	JACK, PIN	
* J1501	1-817-185-11	JACK BLOCK, PIN 8P	
J1502	1-565-790-32	JACK, SMALL TYPE 2P	
JS0001	1-216-864-11	SHORT CHIP	
JS0002	1-216-864-11	SHORT CHIP	
JS0003	1-216-864-11	SHORT CHIP	
JS0101	1-216-864-11	SHORT CHIP	
JS0200	1-216-864-11	SHORT CHIP	
JS0300	1-216-864-11	SHORT CHIP	
JS0301	1-216-864-11	SHORT CHIP	
JS0302	1-216-864-11	SHORT CHIP	
JS0303	1-216-864-11	SHORT CHIP	
JS0304	1-216-864-11	SHORT CHIP	
JS0305	1-216-864-11	SHORT CHIP	
JS0306	1-216-864-11	SHORT CHIP	
JS0307	1-216-864-11	SHORT CHIP	
JS0308	1-216-864-11	SHORT CHIP	
JS0309	1-216-864-11	SHORT CHIP	
JS0310	1-216-864-11	SHORT CHIP	
JS0311	1-216-864-11	SHORT CHIP	
JS0312	1-216-864-11	SHORT CHIP	
JS0313	1-216-864-11	SHORT CHIP	
JS0314	1-216-864-11	SHORT CHIP	
JS0315	1-216-864-11	SHORT CHIP	
JS1007	1-216-864-11	SHORT CHIP	
JS1008	1-216-864-11	SHORT CHIP	
JS1009	1-216-864-11	SHORT CHIP	
JS1010	1-216-864-11	SHORT CHIP	
JS1011	1-216-864-11	SHORT CHIP	
JS1012	1-216-864-11	SHORT CHIP	
JS1013	1-216-864-11	SHORT CHIP	
JS1014	1-216-864-11	SHORT CHIP	
JS1015	1-216-864-11	SHORT CHIP	
JS1016	1-216-864-11	SHORT CHIP	
JS1018	1-216-864-11	SHORT CHIP	
JS1019	1-216-864-11	SHORT CHIP	

COIL

L0202	1-412-951-11	INDUCTOR	10µH
L0305	1-414-398-11	INDUCTOR	10µH
L0400	1-414-398-11	INDUCTOR	10µH
L0401	1-414-398-11	INDUCTOR	10µH
L0500	1-414-398-11	INDUCTOR	10µH
L0501	1-414-398-11	INDUCTOR	10µH
L0600	1-414-398-11	INDUCTOR	10µH

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REF. NO.	PART NO.	DESCRIPTION	VALUES
L0601	1-414-398-11	INDUCTOR	10µH
L1416	1-412-943-11	INDUCTOR	2.2µH
L1417	1-412-947-11	INDUCTOR	4.7µH
L1418	1-414-398-11	INDUCTOR	10µH
LF1200	1-239-581-21	FERRITE	0µH
	TRANSISTOR		
Q0139	8-729-010-25	TRANSISTOR	MSD601-RT1
Q0313	8-729-425-18	TRANSISTOR	XN4504
Q0314	8-729-010-05	TRANSISTOR	MSB709-RT1
Q0315	8-729-010-25	TRANSISTOR	MSD601-RT1
Q0316	8-729-010-05	TRANSISTOR	MSB709-RT1
Q0317	8-729-010-25	TRANSISTOR	MSD601-RT1
Q0318	8-729-010-25	TRANSISTOR	MSD601-RT1
Q0319	8-729-200-13	TRANSISTOR	2SC2712-Y
Q0900	8-729-030-20	TRANSISTOR	2SC4097-T106PQR
Q0901	8-729-030-20	TRANSISTOR	2SC4097-T106PQR
Q1000	8-729-010-25	TRANSISTOR	MSD601-RT1
Q1001	8-729-010-05	TRANSISTOR	MSB709-RT1
Q1200	8-729-055-71	TRANSISTOR	MPSA44
Q1201	8-729-051-96	TRANSISTOR	CEN1000TR
Q1202	8-729-051-95	TRANSISTOR	CEN1014TR
Q1415	8-729-026-52	TRANSISTOR	2SA1576A-T106-R
Q1416	8-729-026-52	TRANSISTOR	2SA1576A-T106-R
	RESISTOR		
R0001	1-216-821-11	METAL CHIP	1K 5% 1/10W
R0002	1-216-821-11	METAL CHIP	1K 5% 1/10W
R0003	1-216-821-11	METAL CHIP	1K 5% 1/10W
R0004	1-216-833-11	METAL CHIP	10K 5% 1/10W
R0005	1-218-866-11	METAL CHIP	6.2K 0.50% 1/10W
R0009	1-216-296-11	SHORT CHIP	
R0010	1-218-871-11	METAL CHIP	10K 0.50% 1/10W
R0011	1-216-833-11	METAL CHIP	10K 5% 1/10W
R0012	1-216-817-11	METAL CHIP	470 5% 1/10W
R0013	1-216-811-11	METAL CHIP	150 5% 1/10W
R0014	1-218-847-11	METAL CHIP	1K 0.50% 1/10W
R0015	1-218-847-11	METAL CHIP	1K 0.50% 1/10W
R0102	1-216-864-11	SHORT CHIP	
R0103	1-218-272-11	METAL CHIP	5.1K 5% 1/10W
R0105	1-216-864-11	SHORT CHIP	
R0112	1-216-803-11	METAL CHIP	33 5% 1/10W
R0113	1-216-803-11	METAL CHIP	33 5% 1/10W
R0114	1-216-803-11	METAL CHIP	33 5% 1/10W
R0115	1-216-803-11	METAL CHIP	33 5% 1/10W
R0116	1-216-803-11	METAL CHIP	33 5% 1/10W
R0117	1-216-803-11	METAL CHIP	33 5% 1/10W
R0118	1-216-803-11	METAL CHIP	33 5% 1/10W
R0119	1-216-803-11	METAL CHIP	33 5% 1/10W
R0120	1-216-803-11	METAL CHIP	33 5% 1/10W
R0121	1-216-803-11	METAL CHIP	33 5% 1/10W
R0122	1-216-803-11	METAL CHIP	33 5% 1/10W
R0123	1-216-803-11	METAL CHIP	33 5% 1/10W
R0124	1-216-803-11	METAL CHIP	33 5% 1/10W
R0125	1-216-803-11	METAL CHIP	33 5% 1/10W
R0126	1-216-803-11	METAL CHIP	33 5% 1/10W
R0139	1-216-864-11	SHORT CHIP	
R0140	1-216-809-11	METAL CHIP	100 5% 1/10W
R0141	1-216-864-11	SHORT CHIP	
R0142	1-216-864-11	SHORT CHIP	
R0145	1-216-847-11	METAL CHIP	150K 5% 1/10W
R0146	1-216-817-11	METAL CHIP	470 5% 1/10W
R0147	1-216-845-11	METAL CHIP	100K 5% 1/10W
R0148	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R0220	1-216-833-11	METAL CHIP	10K 5% 1/10W
R0221	1-216-833-11	METAL CHIP	10K 5% 1/10W
R0222	1-216-833-11	METAL CHIP	10K 5% 1/10W
R0224	1-216-803-11	METAL CHIP	33 5% 1/10W
R0225	1-216-803-11	METAL CHIP	33 5% 1/10W
R0226	1-216-803-11	METAL CHIP	33 5% 1/10W
R0227	1-216-803-11	METAL CHIP	33 5% 1/10W
R0228	1-216-803-11	METAL CHIP	33 5% 1/10W
R0229	1-216-803-11	METAL CHIP	33 5% 1/10W
R0230	1-216-803-11	METAL CHIP	33 5% 1/10W
R0231	1-216-803-11	METAL CHIP	33 5% 1/10W
R0232	1-216-803-11	METAL CHIP	33 5% 1/10W
R0233	1-216-803-11	METAL CHIP	33 5% 1/10W
R0234	1-216-803-11	METAL CHIP	33 5% 1/10W
R0235	1-216-800-11	METAL CHIP	18 5% 1/10W
R0236	1-216-800-11	METAL CHIP	18 5% 1/10W
R0238	1-216-800-11	METAL CHIP	18 5% 1/10W
R0239	1-216-806-11	METAL CHIP	56 5% 1/10W
R0240	1-216-806-11	METAL CHIP	56 5% 1/10W
R0242	1-216-806-11	METAL CHIP	56 5% 1/10W
R0243	1-216-815-11	METAL CHIP	330 5% 1/10W
R0244	1-216-821-11	METAL CHIP	1K 5% 1/10W

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REF. NO.	PART NO.	DESCRIPTION	VALUES		
R0300	1-216-803-11	METAL CHIP	33	5%	1/10W
R0301	1-216-803-11	METAL CHIP	33	5%	1/10W
R0302	1-216-833-11	METAL CHIP	10K	5%	1/10W
R0303	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R0304	1-216-803-11	METAL CHIP	33	5%	1/10W
R0305	1-216-833-11	METAL CHIP	10K	5%	1/10W
R0308	1-216-864-11	SHORT CHIP			
R0309	1-216-864-11	SHORT CHIP			
R0310	1-216-049-11	RES-CHIP	1K	5%	1/10W
R0311	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R0312	1-216-085-91	RES-CHIP	33K	5%	1/10W
R0334	1-216-864-11	SHORT CHIP			
R0341	1-216-864-11	SHORT CHIP			
R0342	1-216-864-11	SHORT CHIP			
R0347	1-216-842-11	METAL CHIP	56K	5%	1/10W
R0348	1-216-842-11	METAL CHIP	56K	5%	1/10W
R0349	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R0350	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R0356	1-216-809-11	METAL CHIP	100	5%	1/10W
R0359	1-216-864-11	SHORT CHIP			
R0360	1-216-830-11	METAL CHIP	5.6K	5%	1/10W
R0361	1-216-822-11	METAL CHIP	1.2K	5%	1/10W
R0369	1-216-833-11	METAL CHIP	10K	5%	1/10W
R0370	1-216-821-11	METAL CHIP	1K	5%	1/10W
R0371	1-216-833-11	METAL CHIP	10K	5%	1/10W
R0372	1-216-864-11	SHORT CHIP			
R0373	1-216-845-11	METAL CHIP	100K	5%	1/10W
R0374	1-216-846-11	METAL CHIP	120K	5%	1/10W
R0375	1-216-846-11	METAL CHIP	120K	5%	1/10W
R0376	1-216-845-11	METAL CHIP	100K	5%	1/10W
R0377	1-216-846-11	METAL CHIP	120K	5%	1/10W
R0378	1-216-846-11	METAL CHIP	120K	5%	1/10W
R0379	1-216-817-11	METAL CHIP	470	5%	1/10W
R0380	1-216-817-11	METAL CHIP	470	5%	1/10W
R0381	1-216-864-11	SHORT CHIP			
R0382	1-216-864-11	SHORT CHIP			
R0383	1-216-845-11	METAL CHIP	100K	5%	1/10W
R0384	1-216-845-11	METAL CHIP	100K	5%	1/10W
R0385	1-216-837-11	METAL CHIP	22K	5%	1/10W
R0386	1-216-837-11	METAL CHIP	22K	5%	1/10W
R0387	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R0389	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R0390	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R0391	1-216-821-11	METAL CHIP	1K	5%	1/10W
R0392	1-216-833-11	METAL CHIP	10K	5%	1/10W
R0393	1-216-809-11	METAL CHIP	100	5%	1/10W
R0394	1-216-814-11	METAL CHIP	270	5%	1/10W
R0395	1-216-864-11	SHORT CHIP			
R0396	1-216-803-11	METAL CHIP	33	5%	1/10W
R0397	1-216-864-11	SHORT CHIP			
R0398	1-216-864-11	SHORT CHIP			
R0399	1-216-864-11	SHORT CHIP			
R0402	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R0403	1-216-864-11	SHORT CHIP			
R0404	1-216-864-11	SHORT CHIP			
R0405	1-216-864-11	SHORT CHIP			
R0406	1-216-864-11	SHORT CHIP			
R0407	1-216-833-11	METAL CHIP	10K	5%	1/10W
R0408	1-216-833-11	METAL CHIP	10K	5%	1/10W
R0500	1-216-797-11	METAL CHIP	10	5%	1/10W
R0501	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R0502	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R0503	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R0504	1-216-821-11	METAL CHIP	1K	5%	1/10W
R0505	1-216-864-11	SHORT CHIP			
R0508	1-216-864-11	SHORT CHIP			
R0509	1-216-821-11	METAL CHIP	1K	5%	1/10W
R0510	1-216-803-11	METAL CHIP	33	5%	1/10W
R0511	1-216-809-11	METAL CHIP	100	5%	1/10W
R0512	1-216-809-11	METAL CHIP	100	5%	1/10W
R0513	1-216-864-11	SHORT CHIP			
R0601	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R0602	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R0605	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R0606	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R0607	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R0608	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R0609	1-216-864-11	SHORT CHIP			
R0610	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R0611	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R0612	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R0613	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R0614	1-216-806-11	METAL CHIP	56	5%	1/10W
R0615	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R0616	1-216-864-11	SHORT CHIP			

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REF. NO.	PART NO.	DESCRIPTION	VALUES		
R0617	1-216-803-11	METAL CHIP	33	5%	1/10W
R0618	1-216-864-11	SHORT CHIP			
R0619	1-216-803-11	METAL CHIP	33	5%	1/10W
R0624	1-216-809-11	METAL CHIP	100	5%	1/10W
R0625	1-216-803-11	METAL CHIP	33	5%	1/10W
R0626	1-216-864-11	SHORT CHIP			
R0627	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R0629	1-216-803-11	METAL CHIP	33	5%	1/10W
R0631	1-216-803-11	METAL CHIP	33	5%	1/10W
R0632	1-216-803-11	METAL CHIP	33	5%	1/10W
R0633	1-216-803-11	METAL CHIP	33	5%	1/10W
R0634	1-216-809-11	METAL CHIP	100	5%	1/10W
R0635	1-216-809-11	METAL CHIP	100	5%	1/10W
R0636	1-216-864-11	SHORT CHIP			
R0637	1-216-864-11	SHORT CHIP			
R0638	1-216-864-11	SHORT CHIP			
R0639	1-216-864-11	SHORT CHIP			
R0640	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R0641	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R0642	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R0643	1-216-864-11	SHORT CHIP			
R0646	1-216-833-11	METAL CHIP	10K	5%	1/10W
R0648	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R0650	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R0651	1-216-864-11	SHORT CHIP			
R0652	1-216-864-11	SHORT CHIP			
R0653	1-216-864-11	SHORT CHIP			
R0654	1-216-803-11	METAL CHIP	33	5%	1/10W
R0655	1-216-803-11	METAL CHIP	33	5%	1/10W
R0656	1-216-803-11	METAL CHIP	33	5%	1/10W
R0657	1-216-803-11	METAL CHIP	33	5%	1/10W
R0658	1-216-803-11	METAL CHIP	33	5%	1/10W
R0659	1-216-864-11	SHORT CHIP			
R0660	1-216-864-11	SHORT CHIP			
R0661	1-216-803-11	METAL CHIP	33	5%	1/10W
R0662	1-216-803-11	METAL CHIP	33	5%	1/10W
R0663	1-216-803-11	METAL CHIP	33	5%	1/10W
R0664	1-216-803-11	METAL CHIP	33	5%	1/10W
R0700	1-216-864-11	SHORT CHIP			
R0701	1-216-864-11	SHORT CHIP			
R0702	1-216-864-11	SHORT CHIP			
R0703	1-216-864-11	SHORT CHIP			
R0801	1-216-864-11	SHORT CHIP			
R0802	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R0803	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R0804	1-216-864-11	SHORT CHIP			
R0805	1-216-864-11	SHORT CHIP			
R0806	1-216-833-11	METAL CHIP	10K	5%	1/10W
R0807	1-216-864-11	SHORT CHIP			
R0808	1-216-864-11	SHORT CHIP			
R0809	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R0810	1-216-864-11	SHORT CHIP			
R0811	1-216-864-11	SHORT CHIP			
R0812	1-216-864-11	SHORT CHIP			
R0813	1-216-864-11	SHORT CHIP			
R0814	1-216-864-11	SHORT CHIP			
R0815	1-216-833-11	METAL CHIP	10K	5%	1/10W
R0900	1-216-821-11	METAL CHIP	1K	5%	1/10W
R0901	1-218-864-11	METAL CHIP	5.1K	0.50%	1/10W
R0902	1-216-135-00	RES-CHIP	2.4	5%	1/8W
R0903	1-216-833-11	METAL CHIP	10K	5%	1/10W
R0904	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R1000	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1001	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1002	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R1011	1-216-818-11	METAL CHIP	560	5%	1/10W
R1014	1-216-864-11	SHORT CHIP			
R1016	1-216-222-00	RES-CHIP	10K	5%	1/8W
R1017	1-216-186-00	RES-CHIP	330	5%	1/8W
R1018	1-216-150-91	RES-CHIP	10	5%	1/8W
R1019	1-216-150-91	RES-CHIP	10	5%	1/8W
R1020	1-216-206-00	RES-CHIP	2.2K	5%	1/8W
R1021	1-216-222-00	RES-CHIP	10K	5%	1/8W
R1022	1-218-843-11	METAL CHIP	680	0.50%	1/10W
R1023	1-216-864-11	SHORT CHIP			
R1024	1-216-864-11	SHORT CHIP			
R1025	1-216-809-11	METAL CHIP	100	5%	1/10W
R1026	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R1028	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R1100	1-216-864-11	SHORT CHIP			
R1101	1-216-864-11	SHORT CHIP			
R1102	1-216-864-11	SHORT CHIP			
R1103	1-216-864-11	SHORT CHIP			
R1104	1-216-864-11	SHORT CHIP			
R1105	1-216-864-11	SHORT CHIP			

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REF. NO.	PART NO.	DESCRIPTION	VALUES		
R1106	1-216-864-11	SHORT CHIP			
R1107	1-216-864-11	SHORT CHIP			
R1108	1-216-864-11	SHORT CHIP			
R1109	1-216-864-11	SHORT CHIP			
R1110	1-216-864-11	SHORT CHIP			
R1111	1-216-864-11	SHORT CHIP			
R1112	1-216-864-11	SHORT CHIP			
R1113	1-216-864-11	SHORT CHIP			
R1114	1-216-864-11	SHORT CHIP			
R1115	1-216-296-11	SHORT CHIP			
R1116	1-216-841-11	METAL CHIP	47K	5%	1/10W
R1117	1-216-841-11	METAL CHIP	47K	5%	1/10W
R1118	1-216-841-11	METAL CHIP	47K	5%	1/10W
R1119	1-216-841-11	METAL CHIP	47K	5%	1/10W
R1121	1-216-841-11	METAL CHIP	47K	5%	1/10W
R1122	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1123	1-216-841-11	METAL CHIP	47K	5%	1/10W
R1126	1-216-864-11	SHORT CHIP			
R1127	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1129	1-216-296-11	SHORT CHIP			
R1130	1-216-809-11	METAL CHIP	100	5%	1/10W
R1200	1-243-465-21	METAL CHIP	6.8M	5%	1/4W
R1201	1-243-464-21	METAL CHIP	475K	0.50%	1/4W
R1202	1-218-895-11	METAL CHIP	100K	0.50%	1/10W
R1203	1-218-917-11	METAL CHIP	820K	0.50%	1/10W
R1204	1-216-850-11	METAL CHIP	270K	5%	1/10W
R1205	1-243-458-91	METAL CHIP	576K	0.50%	1/10W
R1206	1-243-462-21	METAL CHIP	1M	5%	1/4W
R1207	1-243-462-21	METAL CHIP	1M	5%	1/4W
R1208	1-218-907-11	METAL CHIP	330K	0.50%	1/10W
R1209	1-216-864-11	SHORT CHIP			
R1210	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1211	1-216-296-11	SHORT CHIP			
R1212	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1213	1-243-459-91	METAL CHIP	143K	0.50%	1/10W
R1214	1-216-296-11	SHORT CHIP			
R1215	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1216	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1217	1-243-460-21	METAL CHIP	348K	0.50%	1/4W
R1218	1-218-883-11	METAL CHIP	33K	0.50%	1/10W
R1219	1-216-864-11	SHORT CHIP			
R1220	1-216-797-11	METAL CHIP	10	5%	1/10W
R1221	1-216-029-00	RES-CHIP	150	5%	1/10W
R1222	1-216-296-11	SHORT CHIP			
R1223	1-216-809-11	METAL CHIP	100	5%	1/10W
R1224	1-218-331-11	METAL CHIP	51K	5%	1/10W
R1225	1-216-295-91	SHORT CHIP			
R1226	1-216-295-91	SHORT CHIP			
R1227	1-243-461-21	METAL CHIP	24	0.50%	1/2W
R1300	1-216-864-11	SHORT CHIP			
R1301	1-216-864-11	SHORT CHIP			
R1302	1-216-864-11	SHORT CHIP			
R1303	1-216-864-11	SHORT CHIP			
R1304	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1305	1-218-843-11	METAL CHIP	680	0.50%	1/10W
R1306	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1307	1-218-843-11	METAL CHIP	680	0.50%	1/10W
R1308	1-216-803-11	METAL CHIP	33	5%	1/10W
R1309	1-216-803-11	METAL CHIP	33	5%	1/10W
R1310	1-216-803-11	METAL CHIP	33	5%	1/10W
R1311	1-216-803-11	METAL CHIP	33	5%	1/10W
R1312	1-218-875-11	METAL CHIP	15K	0.50%	1/10W
R1313	1-218-875-11	METAL CHIP	15K	0.50%	1/10W
R1314	1-218-875-11	METAL CHIP	15K	0.50%	1/10W
R1315	1-218-875-11	METAL CHIP	15K	0.50%	1/10W
R1316	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1317	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1318	1-216-864-11	SHORT CHIP			
R1319	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1320	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1321	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1322	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1323	1-216-864-11	SHORT CHIP			
R1324	1-216-864-11	SHORT CHIP			
R1402	1-216-864-11	SHORT CHIP			
R1404	1-218-873-11	METAL CHIP	12K	0.50%	1/10W
R1405	1-218-851-11	METAL CHIP	1.5K	0.50%	1/10W
R1406	1-218-831-11	METAL CHIP	220	0.50%	1/10W
R1407	1-218-833-11	METAL CHIP	270	0.50%	1/10W
R1408	1-218-831-11	METAL CHIP	220	0.50%	1/10W
R1409	1-218-833-11	METAL CHIP	270	0.50%	1/10W
R1440	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1441	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1442	1-216-864-11	SHORT CHIP			
R1443	1-216-864-11	SHORT CHIP			

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REF. NO.	PART NO.	DESCRIPTION	VALUES		
R1444	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1501	1-211-990-11	METAL CHIP	75	0.50%	1/10W
R1502	1-216-801-11	METAL CHIP	22	5%	1/10W
R1503	1-216-801-11	METAL CHIP	22	5%	1/10W
R1504	1-211-990-11	METAL CHIP	75	0.50%	1/10W
R1505	1-211-990-11	METAL CHIP	75	0.50%	1/10W
R1506	1-211-990-11	METAL CHIP	75	0.50%	1/10W
R1507	1-216-845-11	METAL CHIP	100K	5%	1/10W
R1508	1-216-845-11	METAL CHIP	100K	5%	1/10W
R1509	1-216-864-11	SHORT CHIP			
R1510	1-211-990-11	METAL CHIP	75	0.50%	1/10W
R1511	1-211-990-11	METAL CHIP	75	0.50%	1/10W
R1512	1-216-864-11	SHORT CHIP			
R1516	1-216-817-11	METAL CHIP	470	5%	1/10W
R1517	1-216-817-11	METAL CHIP	470	5%	1/10W
R1518	1-216-864-11	SHORT CHIP			
R1519	1-216-864-11	SHORT CHIP			
R1520	1-216-817-11	METAL CHIP	470	5%	1/10W
R1521	1-216-817-11	METAL CHIP	470	5%	1/10W
R1524	1-216-864-11	SHORT CHIP			
R1525	1-216-864-11	SHORT CHIP			
R1526	1-216-864-11	SHORT CHIP			
R1527	1-216-864-11	SHORT CHIP			
R1528	1-216-864-11	SHORT CHIP			
R1530	1-216-864-11	SHORT CHIP			
R1531	1-216-864-11	SHORT CHIP			
R1532	1-216-864-11	SHORT CHIP			
R1533	1-216-864-11	SHORT CHIP			
R1534	1-216-864-11	SHORT CHIP			
R1535	1-216-864-11	SHORT CHIP			
R1536	1-216-864-11	SHORT CHIP			
R1537	1-216-864-11	SHORT CHIP			
R1538	1-216-864-11	SHORT CHIP			
R1539	1-216-864-11	SHORT CHIP			
R1540	1-216-864-11	SHORT CHIP			
R1541	1-216-864-11	SHORT CHIP			
R1542	1-216-864-11	SHORT CHIP			
R1543	1-216-864-11	SHORT CHIP			
R1603	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1604	1-216-864-11	SHORT CHIP			
R1605	1-216-809-11	METAL CHIP	100	5%	1/10W
R1606	1-216-809-11	METAL CHIP	100	5%	1/10W

REF. NO.	PART NO.	DESCRIPTION	VALUES
	RESISTOR BRIDGE		
RB0400	1-234-377-21	RES, NETWORK 4.7KX4	(1005)
RB0401	1-242-963-21	RES, NETWORK 33X4	(1005)
RB0500	1-234-377-21	RES, NETWORK 4.7KX4	(1005)
RB0501	1-234-377-21	RES, NETWORK 4.7KX4	(1005)
RB0502	1-234-377-21	RES, NETWORK 4.7KX4	(1005)
RB0503	1-234-377-21	RES, NETWORK 4.7KX4	(1005)
RB0504	1-234-377-21	RES, NETWORK 4.7KX4	(1005)
RB0600	1-234-377-21	RES, NETWORK 4.7KX4	(1005)
RB0601	1-234-377-21	RES, NETWORK 4.7KX4	(1005)
RB0602	1-234-377-21	RES, NETWORK 4.7KX4	(1005)
RB0603	1-234-377-21	RES, NETWORK 4.7KX4	(1005)
RB0604	1-234-377-21	RES, NETWORK 4.7KX4	(1005)
RB0605	1-234-378-21	RES, NETWORK 10KX4	(1005)
RB0606	1-234-376-21	RES, NETWORK 2.2KX4	(1005)
RB0607	1-234-376-21	RES, NETWORK 2.2KX4	(1005)
RB0608	1-242-963-21	RES, NETWORK 33X4	(1005)
RB0609	1-242-963-21	RES, NETWORK 33X4	(1005)
RB0610	1-242-963-21	RES, NETWORK 33X4	(1005)
RB0611	1-242-963-21	RES, NETWORK 33X4	(1005)
RB0612	1-242-963-21	RES, NETWORK 33X4	(1005)
RB0613	1-242-963-21	RES, NETWORK 33X4	(1005)
RB0614	1-242-963-21	RES, NETWORK 33X4	(1005)
RB0615	1-242-963-21	RES, NETWORK 33X4	(1005)
RB0616	1-242-963-21	RES, NETWORK 33X4	(1005)
RB0617	1-242-963-21	RES, NETWORK 33X4	(1005)
RB0618	1-242-963-21	RES, NETWORK 33X4	(1005)
RB0619	1-242-963-21	RES, NETWORK 33X4	(1005)
RB0620	1-242-963-21	RES, NETWORK 33X4	(1005)
RB0621	1-242-963-21	RES, NETWORK 33X4	(1005)
RB0622	1-242-963-21	RES, NETWORK 33X4	(1005)
RB0623	1-242-963-21	RES, NETWORK 33X4	(1005)
RB0624	1-242-963-21	RES, NETWORK 33X4	(1005)
RB0625	1-242-963-21	RES, NETWORK 33X4	(1005)
RB0626	1-242-963-21	RES, NETWORK 33X4	(1005)
RB0800	1-234-378-21	RES, NETWORK 10KX4	(1005)
RB0802	1-242-963-21	RES, NETWORK 33X4	(1005)
RB0803	1-234-378-21	RES, NETWORK 10KX4	(1005)
RB0804	1-234-378-21	RES, NETWORK 10KX4	(1005)
RB0900	1-234-378-21	RES, NETWORK 10KX4	(1005)
RB0901	1-234-378-21	RES, NETWORK 10KX4	(1005)
RB1000	1-242-963-21	RES, NETWORK 33X4	(1005)
RB1001	1-242-963-21	RES, NETWORK 33X4	(1005)
RB1002	1-242-963-21	RES, NETWORK 33X4	(1005)

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

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REF. NO.	PART NO.	DESCRIPTION	VALUES
RB1003	1-242-963-21	RES, NETWORK 33X4	(1005)
RB1004	1-242-963-21	RES, NETWORK 33X4	(1005)
RB1005	1-242-963-21	RES, NETWORK 33X4	(1005)
RB1006	1-242-963-21	RES, NETWORK 33X4	(1005)
RB1007	1-242-963-21	RES, NETWORK 33X4	(1005)
	SWITCH		
S0300	1-571-588-11	SWITCH, SLIDE	
S1600	1-572-474-11	SWITCH, TACTILE	
	TRANSFORMER		
⚠ T1200	1-435-991-21	TRANSFORMER, MODEM	
	TUNER		
TU0300	1-693-597-11	TUNER	
	VARISTOR		
⚠ VDR001	1-251-628-11	ABSORBER, SURGE	
⚠ VDR002	1-417-341-11	ABSORBER, SURGE	
⚠ VDR003	1-417-341-11	ABSORBER, SURGE	
	CRYSTAL		
X0101	1-795-613-11	VIBRATOR, CRYSTAL (27MHZ)	
X0200	1-767-399-31	VIBRATOR, CRYSTAL	
X0300	1-795-612-11	VIBRATOR, CRYSTAL	
X0900	1-760-928-21	VIBRATOR, CRYSTAL	
X1100	1-767-888-21	VIBRATOR, CRYSTAL	
X1300	1-760-337-21	VIBRATOR, CRYSTAL	

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*	**A-6787-911-A**	**PS-449 BOARD, COMPLETE**			
*	3-741-933-01	HEAT SINK			
	7-682-547-09	SCREW +B 3X6			
	7-685-646-79	SCREW +BVTP 3X8	TYPE2	IT-3	
	CAPACITOR				
⚠ C101	1-104-705-11	MYLAR	0.1μF	20%	250V
⚠ C102	1-104-705-11	MYLAR	0.1μF	20%	250V
⚠ C103	1-113-900-11	CERAMIC	470pF	10%	250V
⚠ C104	1-113-900-11	CERAMIC	470pF	10%	250V
⚠ C105	1-113-889-11	CERAMIC	0.001μF	20%	250V
⚠ C106	1-125-738-11	ELECT(BLOCK)	270μF	20%	250V
C107	1-129-928-61	FILM	0.0027μF	5%	630V

REF. NO.	PART NO.	DESCRIPTION	VALUES		
C108	1-107-910-11	ELECT	100μF	20%	50V
C109	1-164-217-11	CERAMIC CHIP	150pF	5%	50V
C110	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C113	1-130-475-00	MYLAR	0.0022μF	5%	50V
C171	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C201	1-128-955-21	ELECT	2200μF	20%	25V
C202	1-128-954-21	ELECT	1000μF	20%	25V
C203	1-128-954-21	ELECT	1000μF	20%	25V
C204	1-107-909-11	ELECT	47μF	20%	50V
C205	1-128-950-21	ELECT	1000μF	20%	16V
C206	1-128-950-21	ELECT	1000μF	20%	16V
C213	1-126-959-11	ELECT	0.47μF	20%	50V
C214	1-126-959-11	ELECT	0.47μF	20%	50V
C215	1-107-910-11	ELECT	100μF	20%	50V
C216	1-107-910-11	ELECT	100μF	20%	50V
C217	1-107-910-11	ELECT	100μF	20%	50V
C218	1-107-910-11	ELECT	100μF	20%	50V
C219	1-107-910-11	ELECT	100μF	20%	50V
C220	1-107-910-11	ELECT	100μF	20%	50V
C221	1-107-910-11	ELECT	100μF	20%	50V
C222	1-107-910-11	ELECT	100μF	20%	50V
C224	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C225	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C226	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C227	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C228	1-107-909-11	ELECT	47μF	20%	50V
C229	1-107-910-11	ELECT	100μF	20%	50V
C230	1-107-910-11	ELECT	100μF	20%	50V
C231	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V

	CONNECTOR		
* CN101	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P	
* CN201	1-564-711-11	PIN, CONNECTOR (SMALL TYPE) 9P	
* CN202	1-564-712-11	PIN, CONNECTOR (SMALL TYPE)10P	
* CN203	1-560-892-00	PIN, CONNECTOR 4P	
* CN204	1-560-892-00	PIN, CONNECTOR 4P	
	DIODE		
⚠ D101	8-719-077-76	DIODE	D2SB60A-F04
D102	8-719-063-70	DIODE	D1NL20U
D104	8-719-063-70	DIODE	D1NL20U
D133	8-719-110-31	DIODE	RD12ESB2
D201	8-719-074-57	DIODE	FCH10A04

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REF. NO.	PART NO.	DESCRIPTION	VALUES		
D202	8-719-061-66	DIODE	FCQ06A06		
D203	8-719-061-66	DIODE	FCQ06A06		
D204	8-719-063-70	DIODE	D1NL20U		
D205	8-719-160-64	DIODE	RD16FB1		
ET201	1-537-770-21	TERMINAL BOARD, GROUND			
ET202	1-537-770-21	TERMINAL BOARD, GROUND			
ET203	1-537-770-21	TERMINAL BOARD, GROUND			
	FUSE				
⚠ F101	1-533-451-11	FUSE	3.15A		125V
	FUSE HOLDER				
FH101	1-533-223-11	FUSE HOLDER	0A	0V	
FH102	1-533-223-11	FUSE HOLDER	0A	0V	
	IC				
⚠ IC101	6-702-180-01	IC	MR1520		
⚠ IC201	8-759-667-11	IC	HA17L431P-TZ		
IC202	8-759-471-81	IC	PQ05RD11		
IC203	8-759-438-18	IC	PQ12RD08		
IC204	6-700-898-01	IC	PQ05RD21		
IC205	6-700-897-01	IC	PQ12RD21		
IC206	6-700-897-01	IC	PQ12RD21		
	COIL				
L201	1-406-659-11	INDUCTOR	10µH		
L202	1-406-659-11	INDUCTOR	10µH		
L204	1-410-513-11	INDUCTOR	22µH		
⚠ LF101	1-437-861-11	COIL, LINE FILTER			
	PHOTO COUPLER				
⚠ PH101	8-749-924-35	PHOTO COUPLER	ON3171-R		
	IC LINK				
⚠ PS101	1-533-595-31	IC LINK	3.15A	90V	
PS102	1-576-508-21	IC LINK	0.7A	50V	
⚠ PS103	1-576-288-31	IC LINK	10A	90V	
	RESISTOR				
R101	1-249-430-11	CARBON	12K	5%	1/4W
R102	1-218-893-11	METAL CHIP	82K	0.50%	1/10W
R104	1-218-903-11	METAL CHIP	220K	0.50%	1/10W
R105	1-249-411-11	CARBON	330	5%	1/4W
R106	1-216-864-11	SHORT CHIP	0		
R107	1-218-883-11	METAL CHIP	33K	0.50%	1/10W
⚠ R201	1-218-849-11	METAL CHIP	1.2K	0.50%	1/10W
⚠ R202	1-218-833-11	METAL CHIP	270	0.50%	1/10W
⚠ R203	1-218-845-11	METAL CHIP	820	0.50%	1/10W
R204	1-249-412-11	CARBON	390	5%	1/4W
R205	1-216-821-11	METAL CHIP	1K	5%	1/10W
R206	1-216-816-11	METAL CHIP	390	5%	1/10W
R207	1-216-813-11	METAL CHIP	220	5%	1/10W
R208	1-212-966-00	FUSIBLE	22	5%	1/2W
R209	1-216-821-11	METAL CHIP	1K	5%	1/10W
R210	1-216-821-11	METAL CHIP	1K	5%	1/10W
R211	1-216-821-11	METAL CHIP	1K	5%	1/10W
R212	1-216-821-11	METAL CHIP	1K	5%	1/10W
R213	1-216-821-11	METAL CHIP	1K	5%	1/10W
	TRANSFORMER				
⚠ T101	1-437-962-11	TRANSFORMER, CONVERTER			
	VARISTOR				
⚠ VDR101	1-801-265-31	VARISTOR	TNR10V271K660		

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*	**A-6787-914-A**	**FL-134 BOARD, MOUNTED**			
	CAPACITOR				
C0401	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C0404	1-124-589-11	ELECT	47µF	20%	16V
C0405	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C0406	1-124-257-00	ELECT	2.2µF	20%	50V
	CONNECTOR				
CN401	1-816-497-11	CONNECTOR, FFC/FPC 24P			
CN0402	1-568-670-11	CONNECTOR, BOARD TO BOARD 9P			
	DIODE				
D0401	8-719-070-83	DIODE	SELU5E20C-TP15		
D0404	8-719-404-50	DIODE	MA111-TX		
D0405	8-719-080-13	DIODE	MPY3361XT		
D0406	8-719-053-87	DIODE	SLR-332VC-T32		
D0407	8-719-077-08	DIODE	SLR-332DCT32		
D0408	8-719-404-50	DIODE	MA111-TX		

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REF. NO.	PART NO.	DESCRIPTION	VALUES		
	IC				
IC0401	6-703-128-01	IC	TSOP4840SB1		
	CHIP CONDUCTOR				
JR0401	1-216-864-11	SHORT CHIP	0		
JR0402	1-216-864-11	SHORT CHIP	0		
JR0403	1-216-296-11	SHORT CHIP	0		
JR0404	1-216-864-11	SHORT CHIP	0		
JR0405	1-216-296-11	SHORT CHIP	0		
JS0402	1-216-864-11	SHORT CHIP	0		
	TRANSISTOR				
Q0401	8-729-010-25	TRANSISTOR	MSD601-RT1		
Q0404	8-729-010-25	TRANSISTOR	MSD601-RT1		
Q0405	8-729-010-05	TRANSISTOR	MSB709-RT1		
Q0406	8-729-010-25	TRANSISTOR	MSD601-RT1		
Q0407	8-729-010-05	TRANSISTOR	MSB709-RT1		
Q0408	8-729-010-05	TRANSISTOR	MSB709-RT1		
	RESISTOR				
R0401	1-216-158-00	RES-CHIP	22	5%	1/8W
R0404	1-216-818-11	METAL CHIP	560	5%	1/10W
R0405	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R0406	1-216-837-11	METAL CHIP	22K	5%	1/10W
R0407	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R0408	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R0409	1-216-809-11	METAL CHIP	100	5%	1/10W
R0410	1-216-815-11	METAL CHIP	330	5%	1/10W
R0411	1-216-809-11	METAL CHIP	100	5%	1/10W
R0412	1-216-833-11	METAL CHIP	10K	5%	1/10W
R0413	1-216-809-11	METAL CHIP	100	5%	1/10W
R0414	1-216-837-11	METAL CHIP	22K	5%	1/10W
R0415	1-216-837-11	METAL CHIP	22K	5%	1/10W
R0416	1-216-837-11	METAL CHIP	22K	5%	1/10W
R0417	1-216-837-11	METAL CHIP	22K	5%	1/10W
R0418	1-216-222-00	RES-CHIP	10K	5%	1/8W
	SWITCH				
S0401	1-771-349-41	SWITCH, KEYBOARD			
S0402	1-762-875-21	SWITCH, KEYBOARD			
S0403	1-771-349-41	SWITCH, KEYBOARD			

REF. NO.	PART NO.	DESCRIPTION	VALUES		
	FR-198				
*	**A-6787-915-A**	**FR-198 BOARD, MOUNTED**			
	CAPACITOR				
C0302	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
	CONNECTOR				
CN0301	1-568-664-11	CONNECTOR, BOARD TO BOARD 9P			
CN0302	1-785-729-21	CONNECTOR, FFC/FPC 7P			
	RESISTOR				
R0301	1-216-837-11	METAL CHIP	22K	5%	1/10W
R0302	1-216-837-11	METAL CHIP	22K	5%	1/10W
R0303	1-216-837-11	METAL CHIP	22K	5%	1/10W
R0304	1-216-837-11	METAL CHIP	22K	5%	1/10W
	SWITCH				
S0301	1-762-875-21	SWITCH, KEYBOARD			
S0302	1-762-875-21	SWITCH, KEYBOARD			
S0303	1-762-875-21	SWITCH, KEYBOARD			
	ACCESSORIES AND PACKAGING				
	1-779-696-22	ADAPTOR, PLUG			
	1-824-651-11	CABLE, DATA			
*	1-769-758-21	CABLE, MODULAR (WITH PLUG)			
	1-823-364-21	CORD, CONNECTION			
	1-824-912-11	CORD, CONNECTION			
	3-078-791-02	CUSHION (BOTTOM)			
	3-078-790-02	CUSHION (TOP)			
	3-078-792-02	INDIVIDUAL CARTON			
	1-782-913-22	IR BLASTER			
	3-078-318-01	QUICK SET-UP GUIDE			
	3-078-316-01	SET-UP GUIDE			
	3-078-317-01	VIEWER'S GUIDE			
	REMOTE COMMANDER				
	1-476-036-12	REMOTE COMMANDER (RMT-V303)			
☛	9-885-030-45	BATTERY COVER (FOR RMT-V303)			

Sony Corporation
Sony Technology Center
Technical Services
Service Promotion Department

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SONY

3-078-316-01

Digital Network Recorder

Installation Guide

Please use this manual first

SVR-3000

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WARNING

To reduce the risk of fire or shock hazard, do not expose the unit to rain or moisture.

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of significant magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Note to the CATV Installer

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building as close to the point of cable entry as practical.

Attention

Telephone Line Interruption

Periodically, the SVR Recorder dials in to the TiVo Personal TV Service, via your telephone line using a toll free or local number. If you pick up your telephone during the time information is being transferred, you will hear static noise. If you would like to use your telephone while the information is being transferred you can hang up and pick up your telephone again. The SVR Recorder will disconnect and allow you to place your call. You can also interrupt the transfer at any time by temporarily unplugging the phone line from the receiver.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The SVR Recorder is intended for use only within the United States.

Owner's Record

The model and serial numbers are located on the back of the SVR Recorder. Record these numbers in the space provided below. Refer to these numbers whenever you need to call your sales or service representative regarding this product.

Model Number: _____

Serial Number: _____

Customer Support

For Hardware and Installation

To arrange for the installation of your SVR Recorder, call the dealer from whom you purchased your system.
For general information, or to resolve problems related to the operation of your SVR Recorder, please contact your Sony dealer or visit Sony website at http://www.sony.com/service. If your dealer or installer is unable to answer your questions, call the Sony Direct Response Center at 1-877-585-SONY (7669) or http://www.sel.sony.com/service.

TiVo Service and Activation

To use most of the features of your SVR Recorder, you will need to activate the TiVo Service. You can activate the TiVo Service on the web at http://www.tivo.com/activate, or by calling TiVo Customer Care at 1-877-367-8486). TiVo Customer Care can also help you if you have questions about your channel lineup, program guide data, or on screen messages.

Macrovision Information

This product incorporates copyright protection technology that is protected by U.S. patents and other intellectual property rights. Use of this copyright protection technology is granted by Macrovision for home and other limited pay per view uses only. Reverse engineering or disassembly is prohibited.

Note on Recording Programming

Programming may be recorded for home viewing only. All other recording is expressly prohibited. Some programming may not be recorded. An additional recording fee may be applied. Call your program providers for details.

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About This Installation Guide

This Installation Guide is part of the complete documentation for your SVR Recorder. This Installation Guide describes how to connect the SVR Recorder and activate the TiVo Service. The Start Here poster provides an easy to read summary of this Installation Guide. The TiVo Viewer's Guide provides detailed information about how to use your TiVo Service, and how to use the different features of this product.

The TiVo Viewer's Guide and this Installation Guide contain some sections with the same name, such as the Troubleshooting section, and similar or related information. These sections are in fact different, but do relate to each other. You will find information regarding connections and activating the TiVo Service in this Installation Guide. You will find information about the different features of the SVR Recorder, and using the TiVo Service, in the TiVo Viewer's Guide.

A **Note** provides information that may be necessary to complete the task.

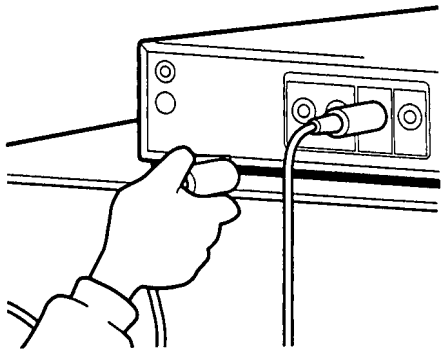
Overview

Your SVR Recorder comes complete with everything you need to enjoy and enhance your television viewing experience.

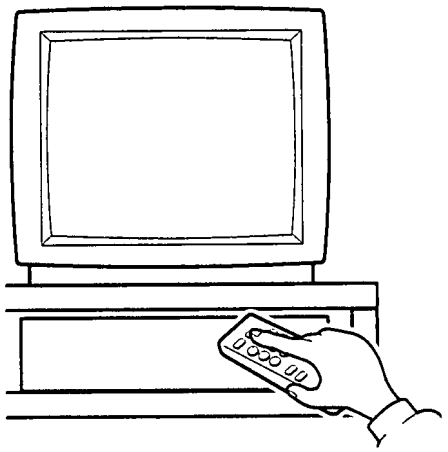
You'll need to have a standard phone line (analog) for the SVR Recorder to use. You do not need to install a new phone jack or phone number for the SVR Recorder to work. However, the SVR Recorder should always be connected to your phone line.

You can find detailed instructions for connecting your SVR Recorder on the Start Here poster and in "Connecting Your Equipment" on page 15.

1 Connect Your SVR Recorder.



2 Complete Guided Setup, and activate your TiVo Service.



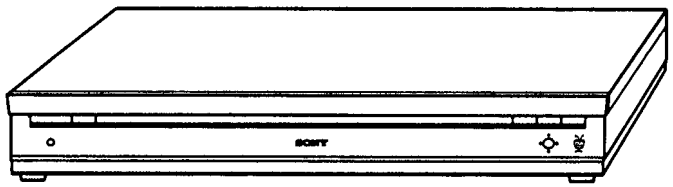
Note

This Installation Guide describes how to connect the SVR Recorder and activate the TiVo Service. The Start Here poster provides an easy to read summary of this Installation Guide. The TiVo Viewer's Guide provides detailed information about how to use your TiVo Service.

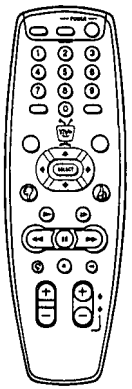
Carton Contents

Check your carton to make sure all of the following items are included. If you are missing any items, contact your Sony dealer.

SVR Recorder

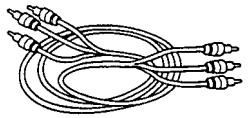


Remote Control

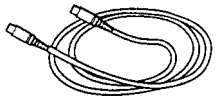


Size AA (R6) batteries

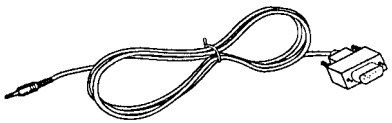
Audio/Video cables



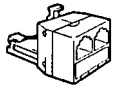
S-Video cable



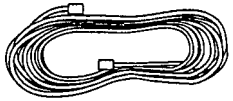
Serial Control cable



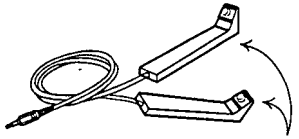
Phone splitter



Phone cord



IR Control cable



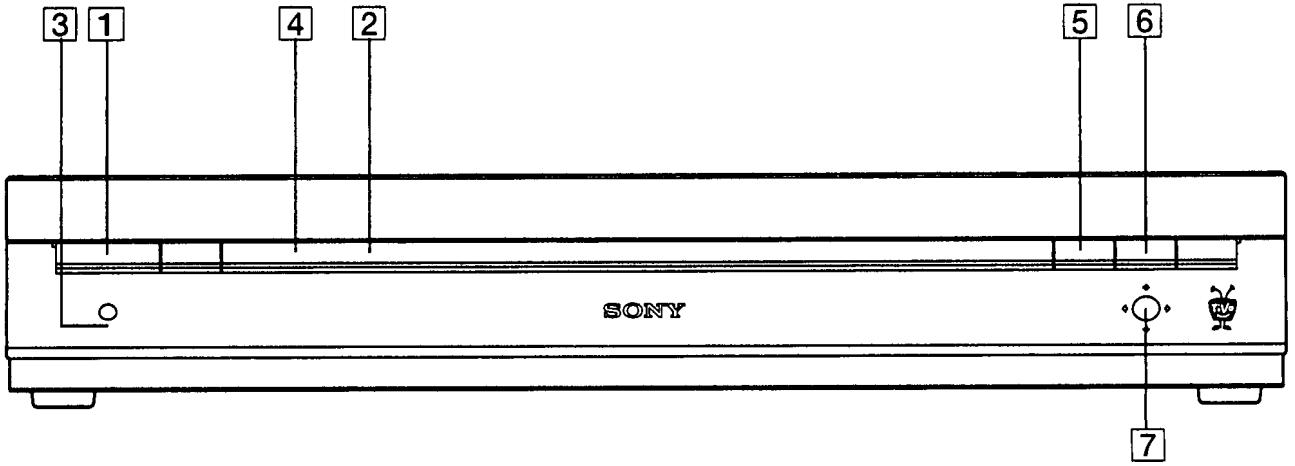
IR Emitters

Notes

- **Your SVR Recorder comes with 25 feet of phone cord for you to use to connect to your nearest phone jack. You don't need a dedicated phone line (your SVR Recorder only needs to share the phone line for five to ten minutes a day), but you may wish to consider installing a jack nearby.**
- **Your SVR Recorder cannot be used with any digital phone system. Doing so will damage your SVR Recorder and void your warranty.**

Parts, Controls, and Functions

Front Panel



1 Power button/LED
Green indicates that the SVR Recorder is powered on.

2 Connecting LED
Yellow indicates that the SVR recorder is connecting to the telephone line.

3 Remote Control Signal Reception Window
Receives control signals from your Remote Control.

4 Recording LED
Red indicates that the SVR Recorder is recording a program.
Yellow indicates that the SVR Recorder is currently using the telephone line to call the TiVo Service.
The LED may appear orange if the unit is both recording a program and using the telephone line.

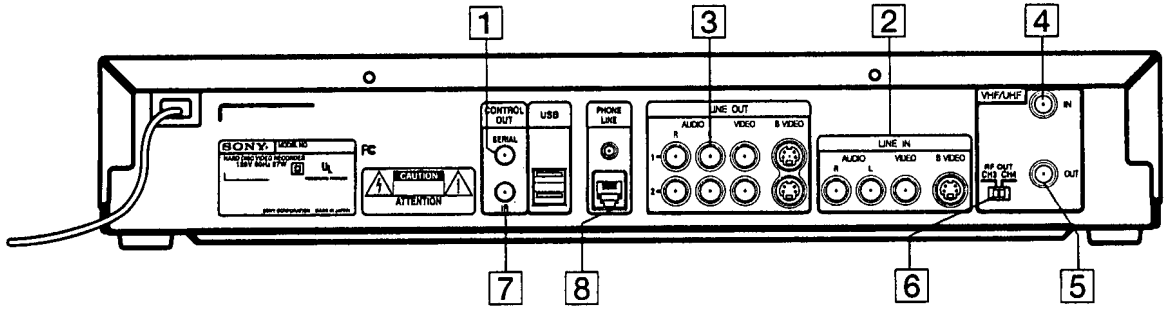
5 LIVE TV/GUIDE button
Switches between live TV and program guide.

6 SELECT buttons
Select (chooses) the currently highlighted item in a menu.

7 Navigation arrows
Moves the highlighted area or cursor left, right, up, or down.

Back Panel

This section provides a brief explanation of the jacks and switch on the back panel and where they are located. You can find detailed information about each jack and switch, and how it is used, on the page number indicated in parentheses.



1 Cntrl (control) Out Serial jack

Connect to your satellite set-top box so the SVR Recorder can change channels on your satellite set-top box (see page 35).

2 A/V Input jacks

a) Connect the right (red) and left (white) jacks to the cable box or satellite receiver audio output jacks of the same color (see page 36).

b) Connect the composite video (yellow) jack to the cable box or satellite receiver composite video output (see page 36).

c) Connect the S-Video jack to the cable box or satellite receiver S-Video output jack if available. This connection provides a better picture than the composite video connection (see page 37).

3 A/V Output jacks

a) Connect the right (red) and left (white) jacks to the TV, VCR and/or audio system audio input jacks of the same color (two sets available) (see page 37).

b) Connect the composite video (yellow) jack to the TV and/or VCR composite video input (two jacks available) (see page 37).

c) Connect the S-Video jack to the TV S-Video input jack if available. This connection provides a better picture than the composite video connection (see page 37).

4 RF In

Connect to your off-air antenna or cable service if you do not have a digital satellite receiver or cable box so the SVR Recorder can receive sound and pictures (see page 38).

5 RF Out

Connect to your TV if your TV does not have A/V inputs so you can view sound and pictures (see page 38).

6 Ch 3|4 switch

Set to the channel that does not broadcast a station in your area. Tune your TV to this channel to view sound and pictures from the SVR Recorder if you connected your TV using RF Out (see page 38).

7 Cntrl (control) Out IR jack

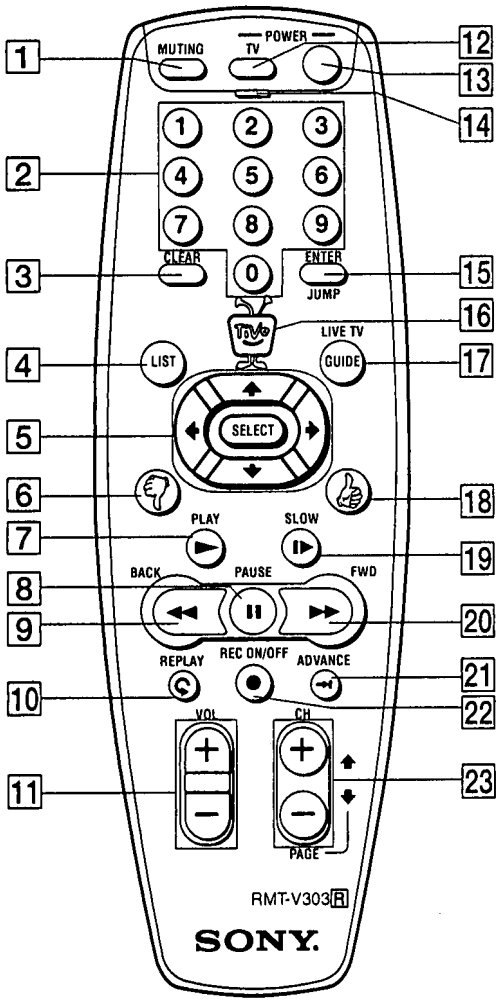
Connect to your satellite or cable set-top box so the SVR Recorder can change channels on your satellite or cable set-top box (see page 35).

8 Phone Line jack

Connect to your phone line so the SVR Recorder can receive program and other information from the TiVo Service (see page 35).

Remote Control

Use the Remote Control to complete Guided Setup and activate your TiVo Service. For complete instructions on how to use the Remote Control, refer to the TiVo Viewer's Guide.



1 MUTING button

Mutes the sound of your TV. See "Programming Your Remote Control" on page 41 to set up the Remote Control to operate your TV.

2 Number keys

Enter numbers for changing channels and entering setup information.

3 CLEAR button

Closes the Program Banner and Status Bar, and clears the text characters you enter in any text entry box.

4 LIST button

Opens the "Now Playing List" of recorded programs.

5 Navigation arrows and SELECT buttons

Moves the highlighted area or cursor left, right, up, or down, and chooses (selects) the currently highlighted item in a menu.

6 Thumbs Down button

Use to indicate that you don't like a program. You can apply up to three thumbs down for any program.

7 PLAY button

Plays a program at normal speed.

8 PAUSE button

Pauses playback. Once in pause mode, you can use the BACK and FWD (forward) buttons to reverse or advance frame-by-frame.

9 BACK button

Plays a program in reverse fast search mode. Shows a program in reverse frame-by-frame when in pause mode.

10 (Instant) REPLAY button

Replays the previous eight seconds of the current program.

11 VOL (volume) +/– buttons

Controls the volume of your TV. See "Programming Your Remote Control" on page 51 to set up the Remote Control to operate your TV or audio system.

12 TV POWER button
Turns your TV or audio system on and off. See "Programming Your Remote Control" on page 41 to set up the Remote Control to operate your TV.

13 (Stand-by) POWER button
Puts your SVR Recorder into and out of stand-by mode. When in stand-by mode, the unit can record selected and suggested programs and connect to the TiVo Service as needed.

14 Remote Active LED
Flashes while the Remote Control is transmitting signals or being programmed.

15 ENTER/JUMP button
Sets the currently entered number as the channel to watch, or jumps back to the previously set channel.

16 TiVo button
Opens TiVo Central, which provides access to features and options.

17 LIVE TV/GUIDE button
Switches between live TV and program guide.

18 Thumbs Up button
Use to indicate that you like a program. You can apply up to three thumbs up for any program.

19 SLOW button
Plays a program in slow speed.

20 FWD (forward) button
Plays a program in fast search mode. Shows a program frame-by-frame when in pause mode.

21 ADVANCE button
Advances the viewing of a program either to the end of a recorded program or to the current time in LIVE TV.

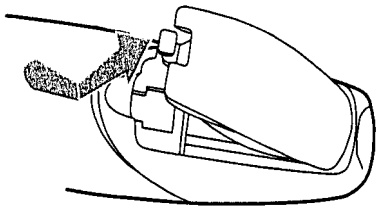
22 REC (record) ON/OFF button
Starts or stops recording of the current program.

23 CH (channel) +/– or PAGE buttons
Changes the SVR Recorder's program channel shown on your TV. Also pages up and down in channel and program listing guides.

Installing Batteries

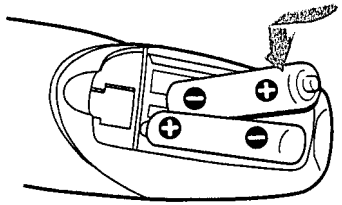
Before you can use the Remote Control, you must insert the supplied batteries. If you want to use this Remote Control to operate other audio/video equipment, such as a TV or stereo, you must program the Remote Control (see page 41).

1 Pull the latch and lift the cover to open the battery compartment.



2 Insert two size AA batteries (supplied).

Be sure to match the + and – marks on the batteries with the + and – marks inside the battery compartment.



3 Close the cover.

Insert the tabs on the cover into the gaps in the rear of the battery compartment. Then, lower the cover onto the Remote Control until you hear the latch click.

Notes

- **When the batteries become weak, the Remote Active LED flashes. If the Remote Control does not work properly, the batteries may be weak.**
- **When replacing batteries, replace both batteries with new ones. Do not mix different types of batteries together.**
- **When you remove the batteries, any manufacturer codes you've programmed may be erased. To program the Remote Control again, see "Programming Your Remote Control" on page 41.**

Connection Examples

This section provides examples showing how to connect the SVR Recorder to your existing antenna, cable, satellite, or audio-visual system. Choose the example closest to your configuration and follow the steps in that section.

Example 1: Antenna or cable, with a VCR, and splitting the signal (see page 16)

Example 2: Antenna or cable, with a VCR (see page 18)

Example 3: Antenna or cable, without a VCR (see page 20)

Example 4: Satellite set-top box with serial connection, and a VCR, using S-Video cables (see page 22)

Example 5: Satellite set-top box with IR input, and a VCR, using S-Video cables (see page 24)

Example 6: Satellite or cable box with IR input, and a VCR, using RF cables (see page 26)

Example 7: Satellite and antenna or cable, with a VCR (see page 28)

Example 8: Satellite and cable with boxes, with a VCR (see page 30)

If you have trouble or if your configuration isn't covered by one of these examples, see "Back Panel Connections Reference" on page 35.

If you have a more advanced system (perhaps including a stereo game system, laser disc player, or switch box), see "General Hints" on page 39.

Note

Your SVR Recorder is not designed for carrying heavy loads such as a TV. Structurally, the SVR Recorder is only capable of supporting the weight of one or two common consumer components such as VCRs, DVD players or A/V Receivers (provided they have four good, broad, padded feet for distribution of the weight near the corners of the SVR Recorder).

Note

If you have cable with a set-top box and if you want to split the signal, use the following procedure.

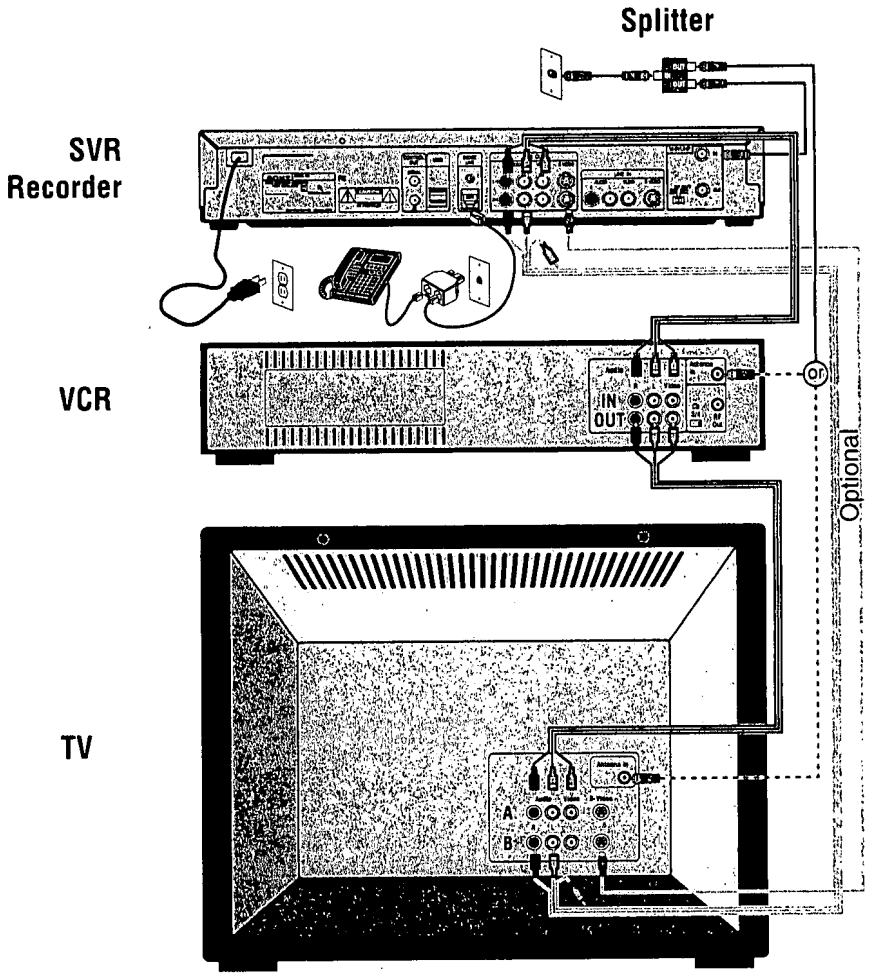
1 Attach the RF splitter to the RF Coaxial cable coming out of the wall, before it connects to the cable box.

2 Connect one of the RF Coaxial cables coming from the RF splitter to the RF In jack on the back of your set-top box.

3 Connect the set-top box's RF Out jack to the SVR Recorder's RF In jack using an RF Coaxial cable. This will let the SVR Recorder record your premium channels normally.

4 Attach the other RF Coaxial cable coming from the RF splitter to your TV or VCR's RF In. You won't be able to watch premium channels with this connection, but other channels will work fine if your TV or VCR is cable-ready (which most are).

Example 1: Antenna or cable, with a VCR, and splitting the signal



Notes

- **Make sure that all of your TV equipment is turned off, including unplugging your SVR Recorder.**
- **If your TV has only one audio jack instead of two, connect just the white audio cable, and leave the red audio cable disconnected.**

Use this example if you have an antenna or cable without a set-top box, you have a VCR, and you want to split your signal to watch one program while you record another. **You'll need to purchase an RF signal splitter or switch box and at least two extra RF cables at your local electronics store.**

1 Connect the program source cable to the SVR Recorder using the splitter.

The program source cable is the cable that your cable company installed, or the one that's connected to your antenna.

If your TV or VCR can accept multiple inputs, use an RF signal splitter. Once connected, you can switch between watching your SVR Recorder and watching your VCR or TV by changing the "Input" or "Source" on your TV using the appropriate button on your TV's remote.

Attach your existing program source cable to the Input section of the RF splitter. Then connect the splitter to the RF In jack on the back of the SVR Recorder using an RF Coaxial cable.

2 Connect the other splitter output to your TV.

Use another RF Coaxial cable to connect the other output of the splitter directly to your TV.

Once connected, you can switch between watching TiVo and watching TV in bypass mode using your TV's "Input", "Source", or "TV/Video" button (on either your TV or the TV's remote).

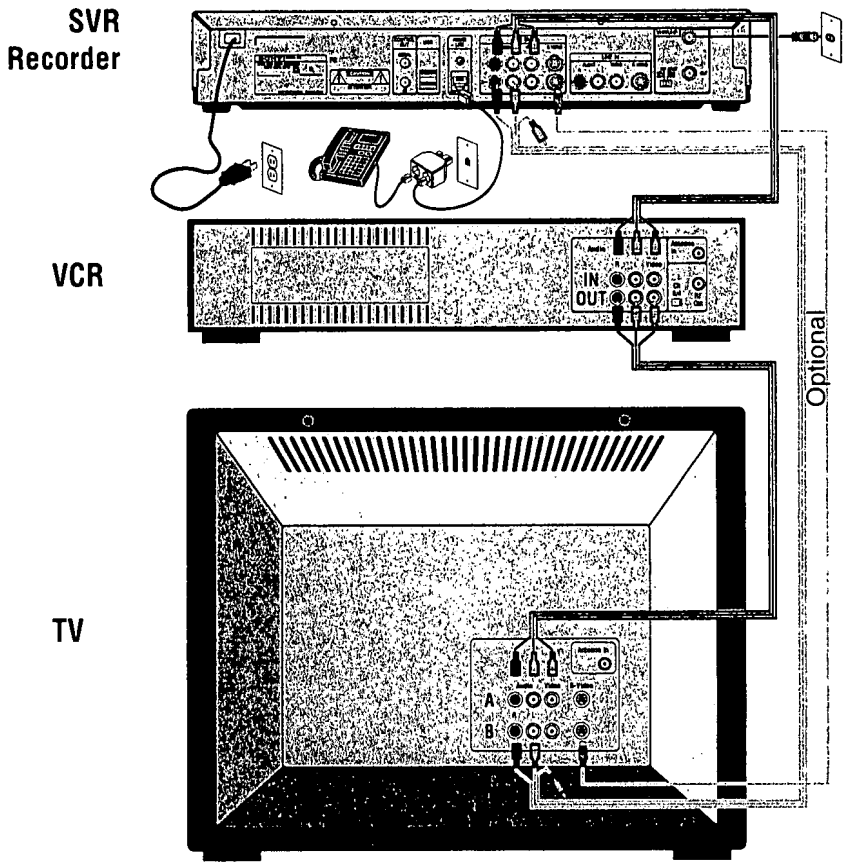
3 Continue.

Now continue with step 3 on page 32.

Note

Make sure that all of your TV equipment is turned off, including unplugging your SVR Recorder.

Example 2: Antenna or cable, with a VCR



Use this example if you have an antenna or cable without a cable box, and you have a VCR, and you do not need to split your signal in order to watch one program while you record another.

1 Find your program source cable.

The program source cable is the cable that your cable company installed, or the one that's connected to your antenna. This cable is probably already hooked up to your VCR or TV; if so, disconnect it.

2 Connect your program source cable to the RF In jack on the back of the SVR Recorder.

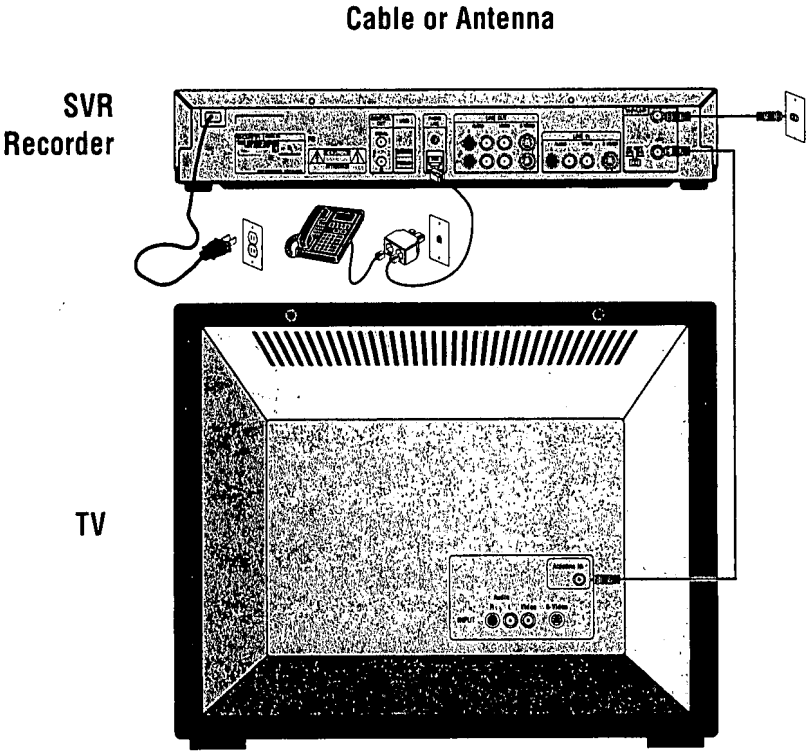
3 Continue.

Now continue with step 3 on page 32.

Note

Make sure that all of your TV equipment is turned off, including unplugging your SVR Recorder.

Example 3: Antenna or cable, without a VCR



Use this example if you have an antenna or cable without a cable box, or you do not have a VCR.

1 Find your program source cable.

The program source cable is the cable that your cable company installed, or the one that's connected to your antenna. This cable is probably already hooked up to your VCR or TV; if so, disconnect it.

2 Connect your program source cable to the RF In jack on the back of the SVR Recorder.

3 Connect the SVR Recorder to your TV.

If your TV has a composite video input, connect an Audio/Video cable from the SVR Recorder Output to your TV's Input. If not, connect the RF coaxial cable (supplied) from the RF Out jack on the back of the SVR Recorder to RF In on the back of your TV.

4 Continue.

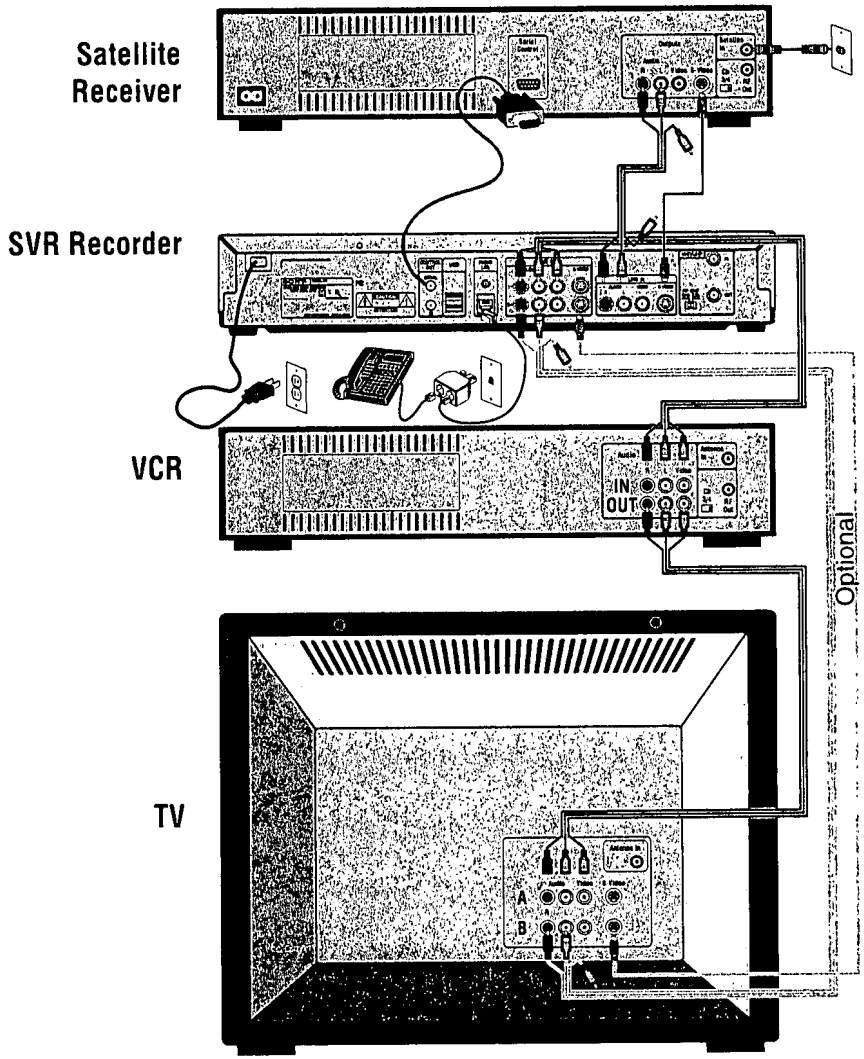
Now continue with step 4 on page 34.

Notes

- **Make sure that all of your TV equipment is turned off, including unplugging your SVR Recorder.**
- **You may need to use the serial adapter (not included) or the RCA Home Control Cable (not included) to connect to your set-top box's Serial Control jack. If you have a Serial Control jack that doesn't work with any of the adapters, use the Cntrl Out IR jack and the IR Control cable instead.**

* Some RCA or Sony satellite receivers have a Home Control Cable connector. (similar to phone jack, but larger).

Example 4: Satellite set-top box with serial connection, and a VCR, using S-Video cables



Use this example if you have a satellite set-top box with a serial connection, and your satellite set-top box uses S-video cables.

Note

A serial connection works better than IR, so use serial when possible.

1 Connect the SVR Recorder to your satellite set-top box.

Connect one end of the Serial Control cable (supplied) to the Cntrl Out Serial In jack on the back of the SVR Recorder.

Your satellite set-top box may have two jacks that look like Serial Control jacks. If so, use the one labeled "low speed data." You may need to use the 9 to 25 pin serial adapter to match your jacks, or the RCA Home Control cable (for some RCA boxes).

2 Connect your program source/video input to the SVR Recorder.

Disconnect any cables that you have connecting your satellite set-top box to your VCR and/or TV. Use the S-Video cable (supplied) to connect the S-Video Out of your satellite set-top box to the S-Video input on the back of the SVR Recorder. You must also use the left (white) and right (red) Audio/Video cables to connect the Audio Out on your satellite set-top box to Audio In on the back of the SVR Recorder, as illustrated here.

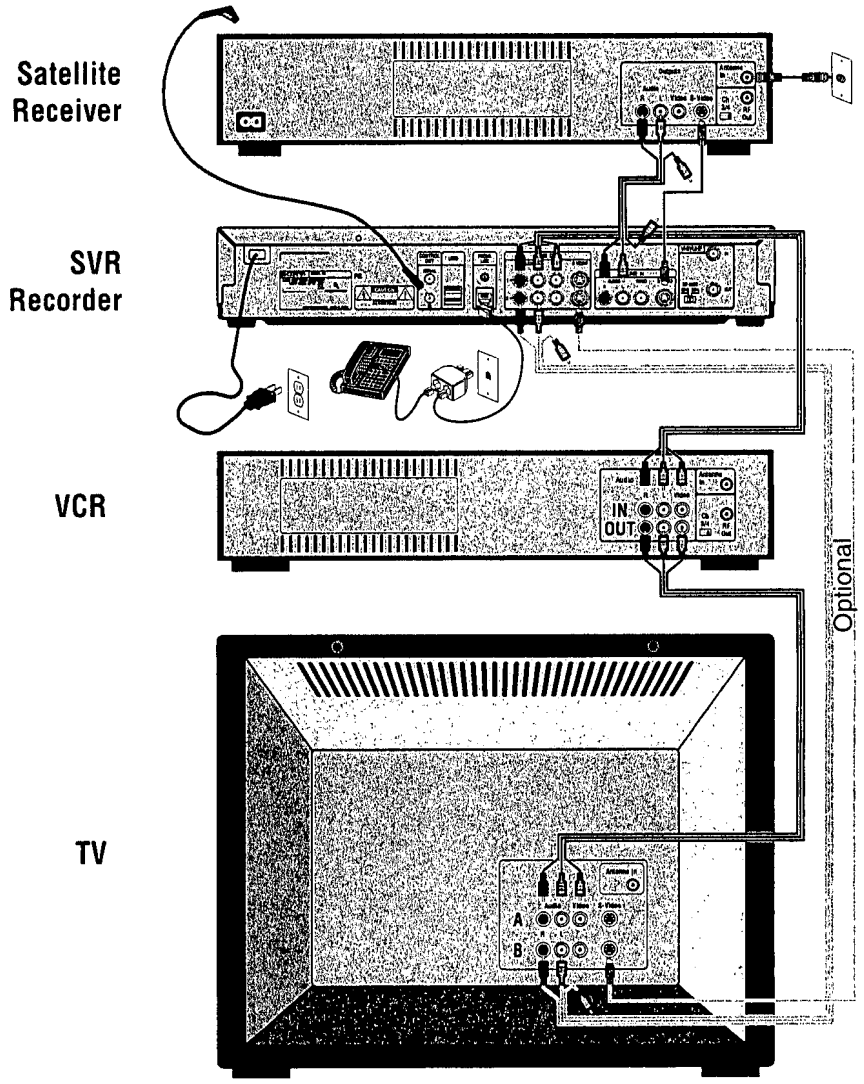
3 Continue.

Now continue with step 3 on page 32.

Notes

- Make sure that all of your TV equipment is turned off, including unplugging your SVR Recorder.
- You may need to purchase a second S-Video cable if one wasn't supplied with your satellite set-top box or VCR.
- Since your TV source comes from a box that can only display one channel at a time, it's not possible for you to split your signal and watch one channel on your TV while the SVR Recorder records a different channel.

Example 5: Satellite set-top box with IR input, and a VCR, using S-Video cables



Use this example if you have a satellite set-top box and VCR, no Serial Control jack, and your satellite set-top box uses S-Video cables.

1 Connect the SVR Recorder to your satellite box.

Since you use a satellite set-top box to receive your television signal, the SVR Recorder needs to be able to change channels on your box in order to record shows and display live TV.

Connect the SVR Recorder to the infrared (IR) receiver of your satellite set-top box using the IR Control cable (supplied). Start by plugging the IR Control cable into the Cntrl Out IR jack on the back of the SVR Recorder. Next, locate the IR receiver on your satellite set-top box – it's usually a small dark red window or button on the front of the box.

Place the IR Emitter (from the IR Control cable) on top of the satellite set-top box, sticking out slightly. The IR Emitter has an adhesive strip so you can adhere it to the set-top box. If it is not possible to stick the IR Emitter directly onto the window, place it in front of or as close as possible to the window.

2 Connect your program source/video input to the SVR Recorder.

Disconnect any cables that you have connecting your satellite set-top box to your VCR and/or TV. Use the S-Video cable (supplied) to connect the S-Video Out of your satellite set-top box to the S-Video input on the back of the SVR Recorder. You must also use the left (white) and right (red) Audio/Video cables to connect the Audio Out on your satellite set-top box to the Audio In on the back of the SVR Recorder, as illustrated here.

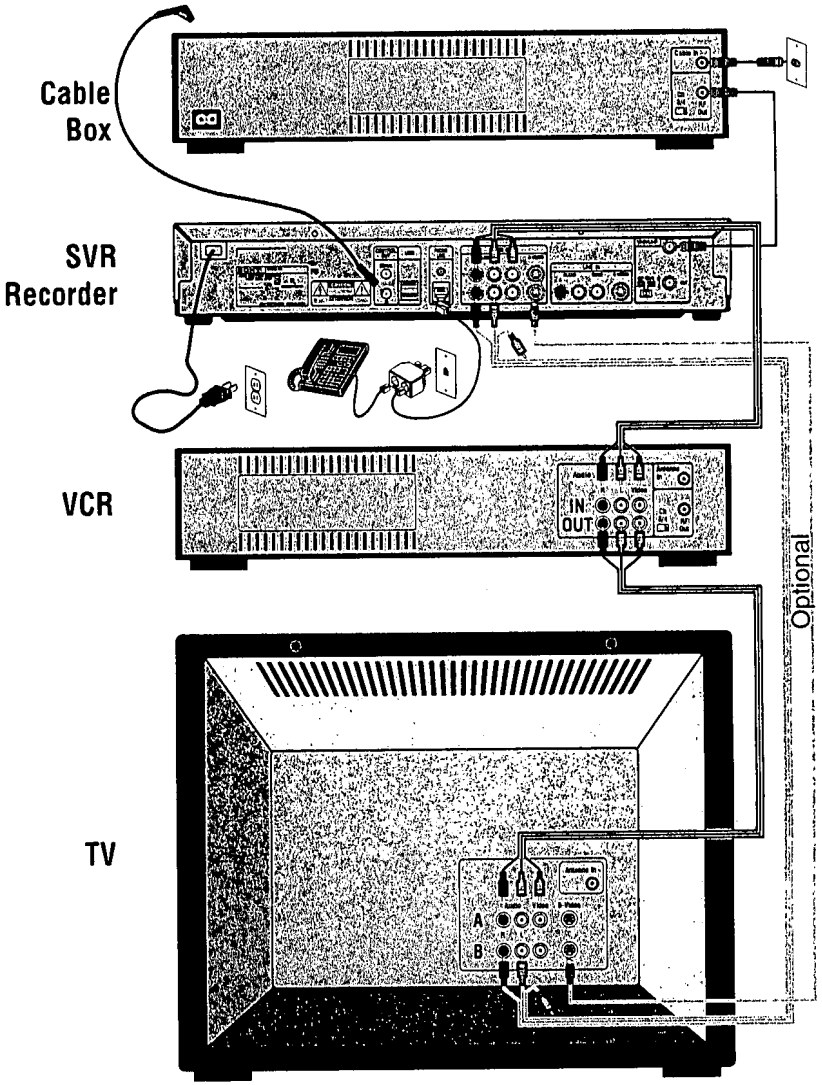
3 Continue.

Now continue with step 3 on page 32.

Notes

- Make sure all of your TV equipment is turned off, including unplugging your SVR Recorder.
- Most satellite set-top boxes have S-Video out or Composite out jacks. Check the back of your satellite set-top box carefully; if there are jacks other than RF Out, follow the steps in Example 4 on page 22.
- If you have a cable set-top box that you are only using because your TV and VCR are not cable-ready, and you don't watch premium channels, then you don't need your cable set-top box any more. The SVR Recorder is cable-ready. Follow Example 2 on page 18.

Example 6: Satellite or cable box with IR input, and a VCR, using RF cables



Use this example if you have a cable or satellite set-top box, the satellite box has no serial input jack, and the cable or satellite box has no Composite Video and L/R audio output jacks.

1 Connect the SVR Recorder to your cable or satellite box.

Since you use a cable set-top box or satellite set-top box to receive your television signal, the SVR Recorder needs to be able to change channels on your box in order to record shows and display live TV.

Connect the SVR Recorder to the infrared (IR) receiver of your box using the IR Control cable (supplied). Start by plugging the IR Control cable into the Cntrl Out IR jack on the back of the SVR Recorder. Next, locate the IR receiver on your box – it's a small dark red window or button on the box's front.

Place the IR Emitter (from the IR Control cable) on top of your set-top box, sticking out slightly. The IR Emitter has an adhesive strip so you can adhere it to the set-top box. Position the IR Emitter in front of or as close as possible to the window.

2 Connect your program source to the SVR Recorder.

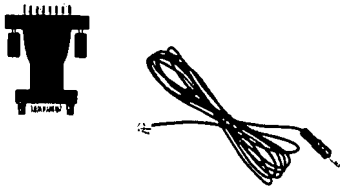
Find the RF coaxial cable coming from the RF Out jack of your satellite box or cable set-top box. This cable is probably already hooked up to your VCR or TV; if so, disconnect it. Now connect this cable to the RF In jack on the back of the SVR Recorder.

3 Continue.

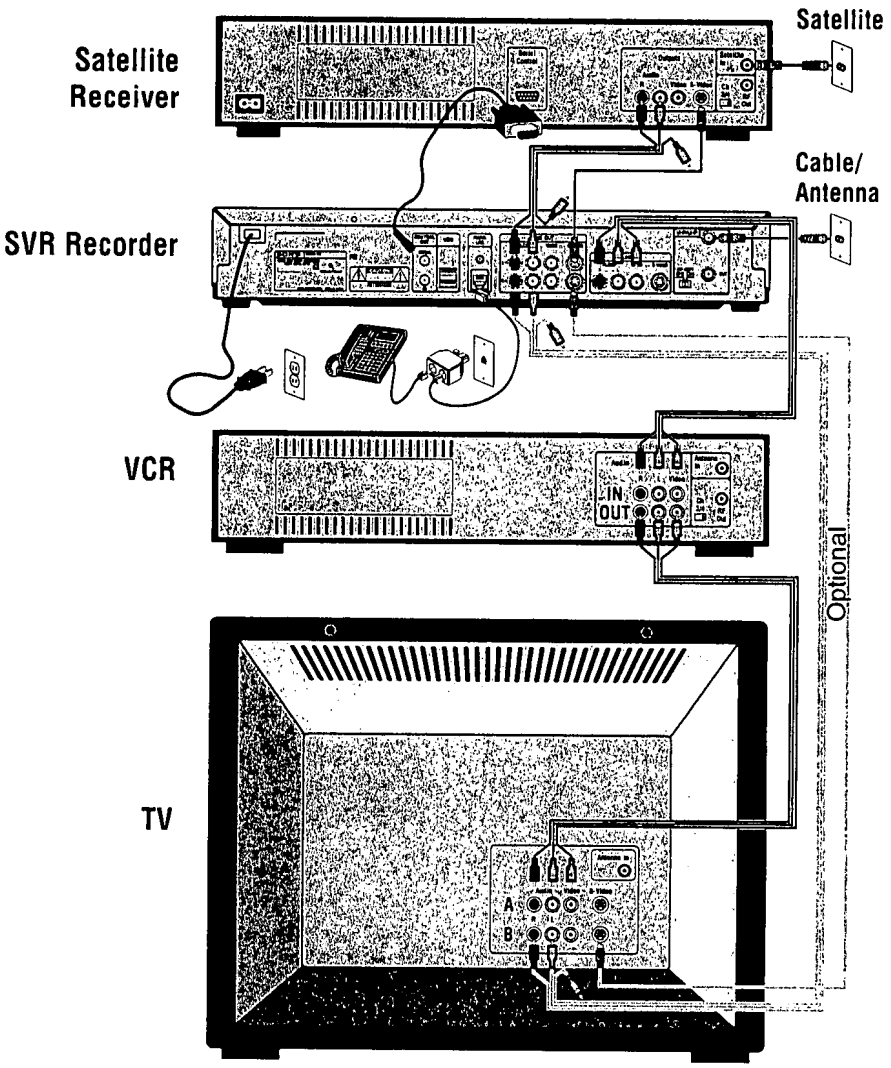
Now continue with step 3 on page 32.

Notes

- Make sure that all of your TV equipment is turned off, including unplugging your SVR Recorder.
- You may need to use the Serial adapter (not included) or the RCA Home Control cable (not included) to connect to your set-top box's Serial Control jack. If you have a Serial Control jack that doesn't work with any of the adapters, use the IR jack and the IR Control cable instead.



Example 7: Satellite and antenna or cable, with a VCR



Use this example if you have a satellite set-top box and either an antenna or cable (with no cable box), and a VCR.

1 Connect the SVR Recorder to your satellite box.

Serial Connection - If your satellite set-top box has a Serial In jack, you can connect the SVR Recorder to your box using the Serial Control cable (supplied). Otherwise, use the IR connection.

IR Connection - Start by plugging the IR Control cable into the Cntrl Out IR jack on the back of the SVR Recorder.

Next, locate the IR receiver on your satellite set-top box – it's usually a small dark red window or button on the front of the box. Place the IR Emitter (from the IR Control cable) on top of the satellite set-top box, sticking out slightly. The IR Emitter has an adhesive strip so you can adhere it to the set-top box. If it is not possible to stick the IR Emitter directly onto the window, place the it in front of or as close as possible to the window.

2 Connect your program source/video input to the SVR Recorder.

a) Disconnect any satellite or antenna/cable connections to your VCR and/or TV. Connect the satellite box to the input of the SVR Recorder using the S-Video cable (preferred) and the left (white) and right (red) Audio/Video cables. If you don't have an S-Video output, use the Yellow Composite Video cable instead.

b) Connect your coaxial antenna or cable to the RF In jack on the back of the SVR Recorder.

3 Continue.

Now continue with step 3 on page 32.

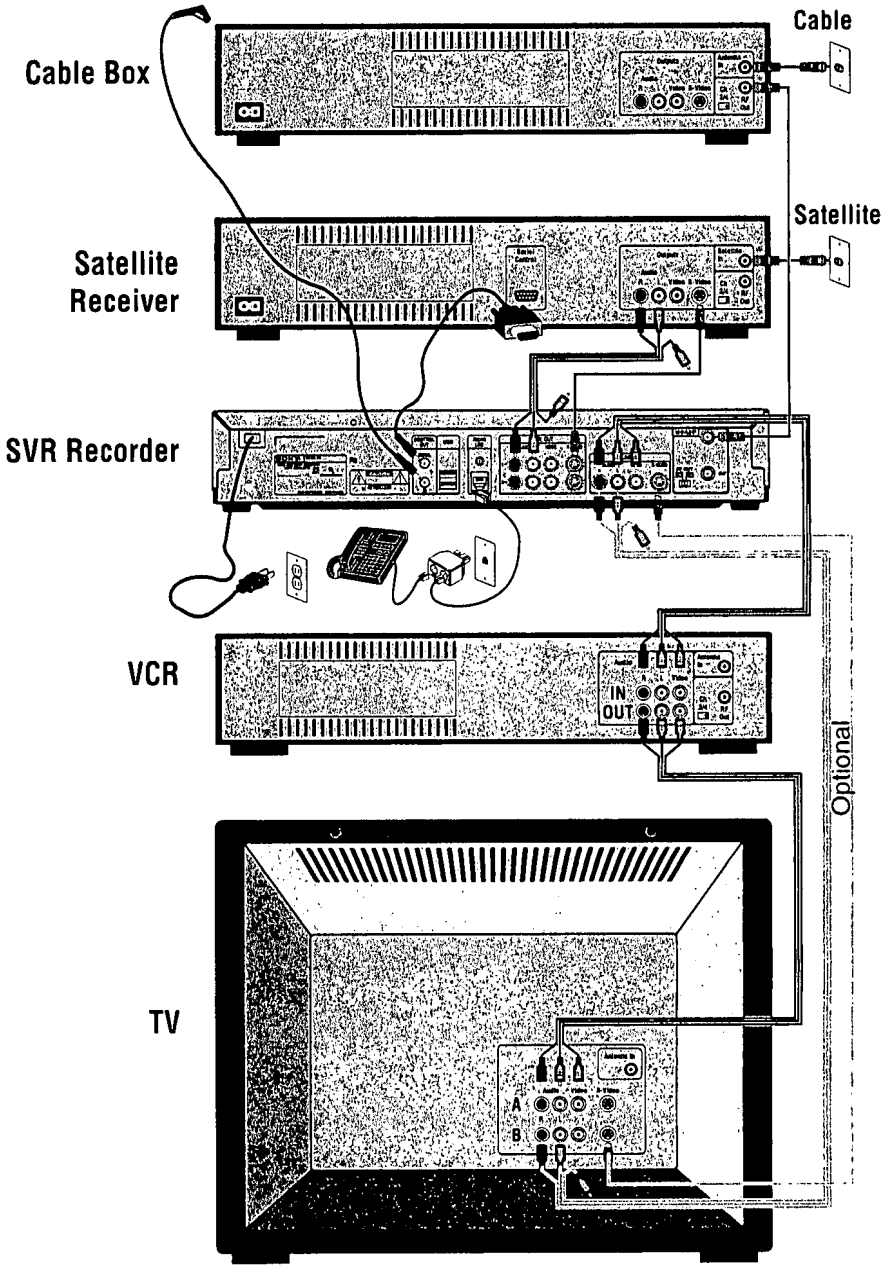
Notes

- **Since you use a satellite set-top box to receive your television signal, the SVR Recorder needs to be able to change channels on your box in order to record shows and display live TV.**
- **A serial connection works better than IR, so use serial if possible.**
- **If your satellite set-top box has two jacks that look like Serial Control jacks, use the one labeled "low speed data." You may need to use the 9 to 25 pin serial adapter to match your box.**

Notes

- Make sure that all of your TV equipment is turned off, including unplugging your SVR Recorder.
- You may need to use the Serial adapter (not included) or the RCA Home Control cable (not included) to connect to your set-top box's Serial Control jack. If you have a Serial Control jack that doesn't work with any of the adapters, use the IR jack and the IR Control cable instead.

Example 8: Satellite and cable with boxes, with a VCR



Notes

- **Since you use both a satellite and cable set-top box to receive your television signal, the SVR Recorder needs to be able to change channels on both of your set-top boxes in order to record shows and display live TV.**
- **If your satellite set-top box doesn't include a Serial In jack, then place the other end of the IR Control cable with the second IR Emitter on top of your satellite receiver, in front and as close as possible to the IR window.**

Use this example if you have both a satellite set-top box and a cable set-top box.

1 Connect the SVR Recorder to your satellite box and your cable box.

Serial Connection - If your satellite set-top box has a Serial In jack, connect the SVR Recorder to it using the Serial Control cable (supplied). If your satellite set-top box has two jacks that look like Serial Control jacks, use the one labeled "low speed data." You may need to use the 9 to 25 pin Serial adapter to match your box.

IR Connection - Plug the IR Control cable into the Cntrl Out IR jack on the back of the SVR Recorder. Next, locate the IR receiver on your cable box – it's usually a small dark red window or button on the front of the box. Place the IR Emitter (from the IR Control cable) in front of the IR receiver, sticking out slightly. The IR Emitter has an adhesive strip so you can adhere it to the box. If it is not possible to stick the IR Emitter directly in front of the window, place it as close to the window as possible.

2 Connect your program source/video input to the SVR Recorder.

a) Disconnect any satellite or cable connections to your VCR and/or TV.

b) Connect the satellite box to the input of the SVR Recorder using the S-Video cable (preferred) and the left (white) and right (red) Audio/Video cables. If you don't have an S-Video output, use the Yellow Audio/Video cable instead.

c) Connect your cable set-top box to the RF In jack on the back of the SVR Recorder using the RF Coaxial cable (supplied).

3 Continue.

Now continue with step 3 on page 32.

Continuing Your Connection Steps

Once you've completed steps 1 and 2 for your particular connection, continue here with step 3.

3 Connect the SVR Recorder to your TV and/or VCR.

If you don't have a VCR, skip to step 3c.

3a Video Output to VCR and TV.

First, look at the back of your VCR and see what types of jacks are available. Choose the best you have from the following options, and connect the SVR Recorder output to your VCR input.

- S-Video cable, along with the Left/Right (white and red) Audio cable (best)
- Composite Video (yellow) and Left/Right Audio (white and red) (better)
- RF Out, using the RF Coaxial cable (good)

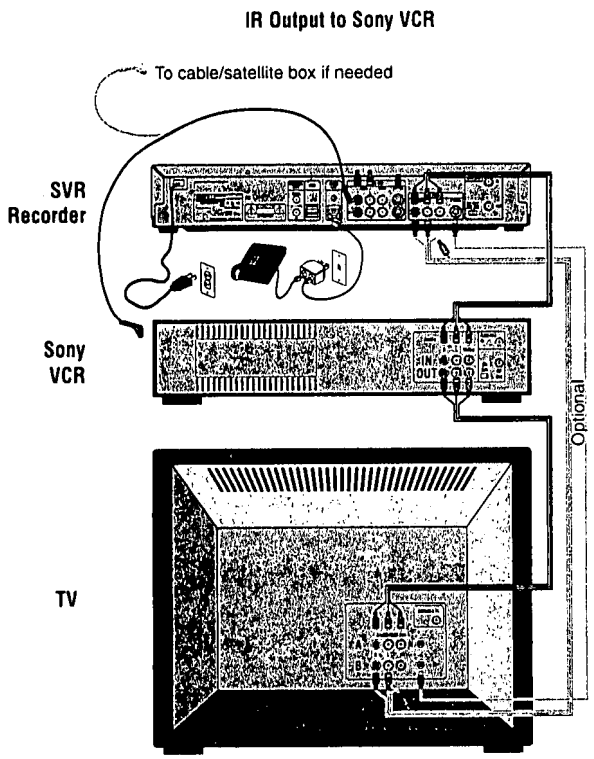
Next, connect your VCR output to your TV input, again using the best connection available (see Note).

If you are connecting using RF Coaxial cable, you need to select between output on channel 3 or 4 using the Ch 3|4 switch next to the RF Out jack on the back of the SVR Recorder. To get the best picture, select the channel that is not occupied by a local broadcast channel. For example, if there is a local broadcast station on channel 4, select channel 3. You will need to tune your VCR to this channel to receive the SVR Recorder.

Your VCR should also have a switch that controls its channel output. Make sure that both the SVR Recorder and any other equipment are all using the same channel – that is, if the SVR Recorder uses channel 3 for output, you must also set your VCR to use channel 3 for output, and then tune your TV to channel 3 to receive a signal.

Note

Your VCR is probably already hooked up to your TV. So, once you've connected the SVR Recorder to your VCR, you've also indirectly hooked up the SVR Recorder to your TV. The SVR Recorder will send its signal to your VCR, and in turn your VCR will send the SVR Recorder's signal to your TV.



Notes

- **If you have a VCR that has S-Video inputs and outputs, and your TV also has an S-Video input, it's preferable to have the SVR Recorder send its signal to your VCR and have your VCR send its signal to your TV. You won't be able to connect the SVR Recorder directly to your TV since the SVR Recorder only has one S-Video Out jack.**

- **Even if you've connected through your VCR, you may want to directly connect the SVR Recorder to your VCR and TV. For example, if your VCR doesn't have S-Video jacks but your TV has an S-Video Input, you probably will want to connect the SVR Recorder directly to your TV to take advantage of the better picture quality of S-Video cables. Also, if your TV has picture-in-picture capabilities, you could watch a videotape on your VCR while you're watching the SVR Recorder.**

- **If your TV has only one audio jack instead of two, connect just the white audio cable, and leave the red audio cable disconnected.**

3b IR Output to VCR - Sony VCRs only.

If you own a Sony VCR, you can use the IR Control cable (supplied) to save programs to a videotape in the VCR using the "Save to my VCR function". (Once connected, refer to your TiVo Viewer's Guide for instructions on how to save programs to your VCR.)

- Plug the IR Control cable into the Cntrl Out IR jack on the back of the SVR Recorder. If you are using a cable or satellite set-top box, you may have already done this.
- Place one IR Emitter (from the IR Control cable) in front of the IR window on the Sony VCR. You can adhere the IR Emitter using its adhesive bottom.

3c Video Output directly to TV.

- If you already did step 3a, this step is optional.
- Look at the back of your TV and the SVR Recorder and see what types of jacks are available. Connect the SVR Recorder output to your TV input using the best possible connection from the following options:
  - S-Video cable, along with the Left/Right (white and red) Audio cable (best)
  - Composite Video (yellow) and Left/Right Audio cable (white and red) (better)
  - RF Output, using the black RF Coaxial cable (good)
- If you are connecting using RF Coaxial cable, you need to select between output on channel 3 or 4 using the small switch next to the RF Out jack on the back of the SVR Recorder. To get the best picture, select the channel that is not occupied by a local broadcast channel. For example, if there is a local broadcast station on channel 4, select channel 3. You will need to tune your VCR to this channel to receive the SVR Recorder.

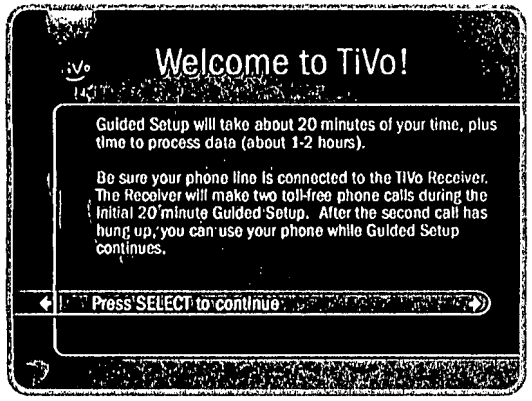
4 Connect the SVR Recorder to your telephone line.

Connect the SVR Recorder to your home telephone line. Use the phone cord (supplied). If you do not have a spare telephone jack for the SVR Recorder, you can plug the phone splitter (supplied) into your telephone jack. Then plug your phone into one of the splitter's jacks and the SVR Recorder into the other.

5 Plug in the SVR Recorder power.

Now you should have everything connected and ready to go. Check all the connections one more time, then turn on your TV equipment. To turn on the SVR Recorder, plug the power cord into the back of the SVR Recorder. After a few moments, you should see TiVo's **Welcome Screen**.

If you do not, you may need to change channels or change which input your TV uses. If you used RF Coaxial cable in step 3, make sure you're viewing the same channel (3 or 4) that you selected. If you're using S-Video or Audio/Video cables, you'll need to change your TV so that it displays the appropriate input. On some TVs, you need to use the "Input" button to switch inputs; other TVs might label this the "Select" or "Video" button. Other TVs require that you keep changing channels until the alternate input is displayed. If you have trouble, double-check your connections and look for help in Additional Information (see pages 45–50).



6 Guided Setup.

Once you see the **Welcome to TiVo!** screen, (see Tivo Viewer's Guide) to set up and activate the TiVo Service.

Back Panel Connections Reference

This section describes the use of the connection jacks and switch on the back panel of the SVR Recorder. The cables are illustrated on page 8, and the back panel is illustrated on page 10. If your setup doesn't match any of the examples in this section, use this information for general reference.

Phone Line

Connect the SVR Recorder to your phone line using the telephone cord (supplied). If you do not have a spare telephone jack for the SVR Recorder, use the phone splitter (supplied).

Cntrl (control) Out Serial

If you have a satellite set-top box or cable set-top box and it features a Serial In jack (sometimes labeled "Low Speed Data"), you can connect the SVR Recorder to your box using the Serial Control cable (supplied), allowing the SVR Recorder to change channels and control your box. A serial connection works better than an IR, so use serial when possible.

Cntrl (control) Out IR

If you have a satellite set-top box or cable set-top box that doesn't include a Serial In jack, connect the SVR Recorder to the IR sensor of your cable set-top box or satellite set-top box using the IR Control cable (supplied). Start by plugging the IR Control cable into the Cntrl Out IR jack on the back of the SVR Recorder. Next, locate the IR receiver on your cable or satellite set-top box – it's usually a small dark red window or button on the front of the box. Place the IR Emitter (from the IR Control cable) on top of the receiver, sticking out slightly. The IR Emitter has an adhesive strip so you can adhere it to the set-top box. If it is not possible to stick the IR Emitter directly onto the receiver, place it in front of or as close as possible to the receiver. Ignore this jack if you're using the Cntrl Out (Serial) jack.

You can also use the IR Control cable to save programs to your Sony VCR. Plug the supplied IR Control cable into the Cntrl Out IR jack on the back of the SVR Recorder. Position the first IR Emitter in front of the IR receiver on your Sony VCR. You can secure the IR Emitter (from the IR Control cable) using the supplied adhesive strip. Optionally, position the second IR Emitter in front of the IR receiver on your satellite set-top box or cable set-top box so it is slightly extended.

Once this connection is made, refer to your TiVo Viewer's Guide for instructions on how to save programs to your VCR.

Audio R and L Inputs

Use these jacks if you have a satellite set-top box, cable set-top box, or digital cable set-top box. Connect the left (white) and right (red) audio out jacks of your set-top box to the SVR Recorder's audio input using the Audio/Video cables (supplied). Note that you will use these jacks for audio if you're using either the yellow Video Input or S-Video Input. Ignore these jacks if you're using the RF In jack.

Composite Video Input

Use this jack if your satellite set-top box, cable set-top box, or digital cable set-top box does not include an S-Video Output jack. Connect the Video Out of your set-top box to the SVR Recorder using the video connector (yellow) on the Audio/Video cables (supplied). Use this jack only if you can't use S-Video Input. Ignore this jack if you're using the RF In jack.

S-Video Input

S-Video will result in a higher quality image than composite video, so use this jack if you have a satellite set-top box or cable set-top box that features an S-Video out jack. Connect the S-Video Out from your set-top box to the SVR Recorder using the S-Video cable (supplied).

Audio R and L Outputs (2 each)

If your TV or stereo features audio input jacks, connect the left (white) and right (red) Audio Output jacks from the SVR Recorder to your TV or stereo using the Audio/Video cables (supplied). If you have both a TV and a VCR, you might use one set of Audio cables for the TV and the other cables for the VCR; see pages 15 through 31 for examples. Ignore these jacks if you're using the RF Out jack.

Composite Video Outputs (2)

If your TV or VCR features a Composite video jack but doesn't have an S-Video input, connect the SVR Recorder to your TV or VCR's Video In using the yellow video connector on the Composite Audio/Video cables (supplied). If you have both a TV and a VCR, you might use one cable for the TV and the other cable for the VCR. Ignore this jack if you're using S-Video Output or the RF Out jack.

S-Video Output

If your TV or VCR features an S-Video input jack, connect it to the SVR Recorder using a second S-Video cable (not supplied). S-Video is preferred over other connections since it provides the highest quality picture. Ignore this jack if you're using Composite Video Outputs or RF Out – but you should disconnect those other connections and use this one instead if your TV or VCR does feature an S-Video input jack.

RF In

If you have cable or an antenna and don't have a satellite set-top box or cable set-top box, connect your cable or antenna to the SVR Recorder using your existing coaxial cable (the one coming out of the wall). Ignore this jack if you're using Audio/Video Input or S-Video Input. If you have a cable box that features both RF Out and S-Video output or Audio/Video output, choose S-Video or Audio/Video instead of RF.

RF Out

If your TV has multiple inputs and you can use the SVR Recorder's S-Video Output or Audio/Video Output, do not use the RF Out jack. But if your TV only has RF In, connect the SVR Recorder to your TV's RF In using the RF Coaxial cable, and see "Ch 3|4 Switch" below. Use the Remote Control supplied with the SVR Recorder to change program channels shown on your TV.

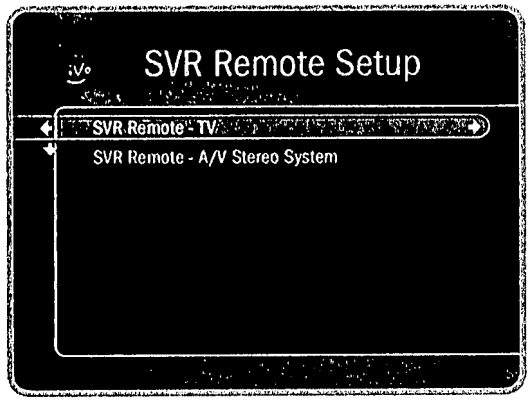
Ch 3/4 Switch

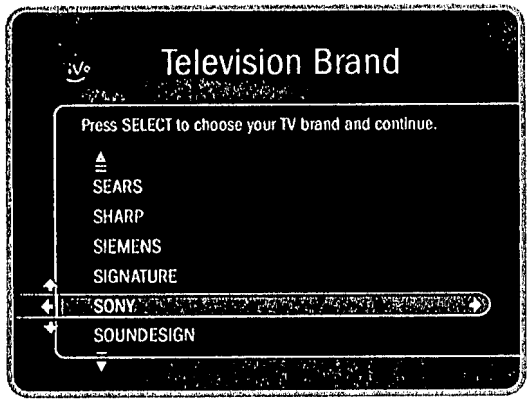
If you use RF Out, set the output to channel 3 or 4 using this switch. To get the best picture, select the channel that is not occupied by a local broadcast channel. For example, if there is a local broadcast station on channel 4, select channel 3 for the output on the SVR Recorder. You will need to tune your television to this channel (3 or 4) to receive a signal through the SVR Recorder.

USB (Universal Serial Bus.) For future use

General Hints

- Study the "Back Panel Connections Reference" section on page 35 to learn what jacks are available on your SVR Recorder.
- Make sure the SVR Recorder receives its signal from your TV source. Work out where your TV signal comes from (satellite, cable or antenna). If you have to go through a switch box or set-top box or stereo, test the output cable on your TV before taking that output and plugging it into the SVR Recorder's input jacks.
- Decide where the SVR Recorder should send its signal. You'll need to get the signal to your TV eventually, but you could choose to have the video signal go through a VCR or to a switch box or A/V receiver before it reaches the TV. If you want the SVR Recorder to be able to save shows to a VCR, you'll also need to have the SVR Recorder's output go to a VCR.
- You may have a lot of sources of video. In addition to the SVR Recorder and a VCR, you may have a video game player, a laser disc player, a DVD player, and a video camera. If so, consider using a switch box or an A/V receiver that has input jacks for your devices, along with an output to your TV and speakers. Then, that A/V receiver or switch box will let you choose what to display on your TV.
- If you're having trouble, see Troubleshooting on pages 45–50. Also, try the Support section on the TiVo website (http://www.tivo.com/).





Programming Your Remote Control

You can set your Remote Control to control your TV's power, muting, and volume by using the "Remote Control Setup" option on the **Messages & Setup** screen. Or you can set your Remote Control to control the volume on your stereo if you have it connected to your TV.

Once you've followed these steps to tell your Remote Control how to control your TV, you'll be able to put away your TV's remote and use the Remote Control from now on. You'll only need your VCR's remote for watching videotapes.

Follow these steps to set up your Remote Control using the on-screen code entry method. If this method doesn't work, try the Learning Mode Method (page 43) or Code Search Method (page 44) methods.

1 Start at TiVo Central.

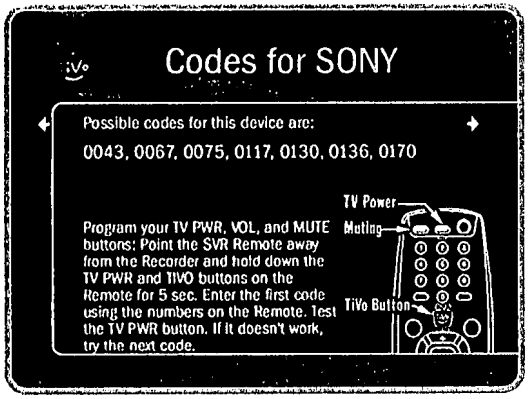
Press the TiVo button to go to TiVo Central.

2 Navigate to SVR Remote - TV.

Choose "Messages & Setup", then "SVR Remote Setup", then "SVR Remote - TV".

3 Identify your TV.

Use the CH (Channel) +/– buttons to scroll down the list of TV brands page by page, choose your TV brand from the list, and press SELECT. If you have been using a TV remote control other than the one that came with your TV, select your TV brand, not the brand of the remote.



Note

If you have your stereo hooked up to your TV, you can program the Remote Control's VOL (volume) and MUTING buttons to send signals to your stereo rather than to your TV. Go to "Messages & Setup", then "SVR Remote Setup", then "SVR Remote - TV". Press the TiVo and VOL buttons to illuminate the LED before you enter the code.

4 Enter the Remote Control code.

When you select your TV brand, you will see a screen with one or more four-digit codes for your TV.

a) Cover the end of the Remote Control with your hand to shield the IR Emitter.

b) On the Remote Control, press and hold the TiVo and TV POWER buttons simultaneously for about three seconds, until the remote's LED illuminates. Release the buttons and the LED will remain illuminated.

c) Use the number keys on your Remote Control to enter the four-digit code you want to test (start with the first code in the list on the screen).

d) After pressing the fourth digit of the code, the LED will flash three times, indicating that you entered a valid code.

e) Test the code by pointing your Remote Control in the direction of the TV and pressing the TV POWER button. If this turns the TV off, you have found the correct code. Now you can use the Remote Control to turn your TV on and off, control volume, and mute the sound.

f) If the Remote Control could not turn your TV off, try the next code listed for your TV.

Note

- **You can program the following keys with the Learning Remote method: TV POWER, VOL (volume) +/–, and MUTING.**
- **Do not attempt this method if there is bright fluorescent lighting or other IR interference.**
- **Unlike code entry and code search, you need to program each button individually in learning mode.**
- **If you have a stereo system connected to the SVR Recorder, you can program the POWER button on the Remote Control to turn on/off your stereo. To do so, use code 1975 instead of 0975 in step 1. You can program the POWER button to turn on/off both your TV and your stereo.**
- **To reset the Remote Control back to the manufacturer's settings, press and hold the TiVo and TV POWER buttons together for three seconds until the LED on the Remote Control remains lit. Enter code 0981 (or 1981) using the number keys on the Remote Control.**

Learning Mode Method

The Remote Control has the ability to "learn" codes from your TV (and/or audio system) remote. This method works for every remote controlled TV (or stereo).

1 Put the Remote Control in learning mode.

a) Press the TiVo button and TV POWER simultaneously for 3 seconds until the LED on the Remote Control remains lit continuously.

b) Using the number keys on the Remote Control, enter the code 0975. The Remote Control LED flashes three times. You have 30 seconds to complete the next step.

2 Position the two remotes.

Position the TV remote and the Remote Control head-to-head about two inches apart with their IR emitters facing each other. (The Remote Control's IR emitter is at the end that you point at the TV.)

3 Send the signal to the Remote Control.

a) Press the button on the Remote Control that you want to teach. For example, TV POWER or MUTING. The Remote Control LED will flash rapidly to indicate that it is ready to be taught. You have 4 seconds to do the next step.

b) Press the equivalent button on the TV remote. For example, if you pressed TV POWER on the Remote Control, press the power button on the TV remote.

c) Press and hold the equivalent button on the TV remote until the Remote Control's LED flashes three times to indicate that it has learned the code, or repeat this step until the LED does flash three times.

d) This step can be repeated as many times as needed.

4 Exit learning mode and test the code.

a) Press the CLEAR button on the Remote Control to exit learning mode.

b) Point the Remote Control at the TV and press the button you just taught. For example, if you've just taught the TV POWER button, it should turn on the TV.

Note

- **In this method, when you find the correct code, it will automatically program the TV POWER, VOL +/–, and MUTING buttons on the Remote Control.**
- **If you have a stereo system connected to the SVR Recorder, you can program the POWER button on the Remote Control to turn on and off both the stereo and your TV. To do so, use code 1999 instead of 0999 in step 1.**
- **To reset the Remote Control back to the manufacturer's settings, press and hold the TiVo and TV POWER buttons together for three seconds until the LED on the Remote Control remains lit. Enter code 0981 (or 1981) using the number keys on the Remote Control.**

Code Search Method

Another method of programming the Remote Control to operate your TV and/or stereo system is the code search method. The Remote Control has hundreds of available codes. The correct code for your TV might be available, yet not listed on the screen for your TV brand.

1 Put the Remote Control in code search mode.

a) Press the TiVo button and TV POWER simultaneously for three seconds until the LED on the Remote Control remains lit continuously.

b) Release the buttons and the LED remains illuminated.

c) Using the number keys on the Remote Control, enter the code 0999.

2 Test the code.

a) Point the Remote Control at the TV, press TV POWER and see if the TV turns off or on.

b) If the TV does turn off or on, confirm that MUTE and VOL (volume) +/– also operate the TV. If they do, go to step 4 below. If they do not, continue with step 3.

3 Try another code.

Continue to cycle through each code by pressing CH+, then test the code by repeating step 2 above. Remember, there are hundreds of codes. If the LED goes out. you have reached the end of the codes.

4 Program the Remote Control with the correct code.

a) When the code allows the Remote Control to operate the TV power, volume and muting, press ENTER to set the code and exit Code Search mode.

b) You can also press CLEAR to exit Code Search mode without setting a new code.

Troubleshooting

TiVo and Sony are dedicated to providing you with quality support and customer service. If you have any questions or difficulties, first refer to the troubleshooting section in the manuals. If you still need help, see below for the appropriate customer service department to contact:

Please go to http://www.sel.sony.com/sel/service/conselec and refer to the FAQ if you need assistance on the following areas:

- Connecting your SVR Recorder with your TV and other A/V equipment.
- Initial Guided Setup difficulties (e.g. phone calls failing).
- Programming the Remote Control to control your TV or A/V equipment.
- Changing channels.
- A system that does not function properly after restart.
- Questions about your Warranty.

Contact TiVo at 1-877-367-8486 if you need assistance on the following areas:

- Activating or using a feature of the TiVo Service.
- Getting correct channel lineup data or program guide data.
- Understanding an onscreen message from TiVo regarding your TiVo Service account.

You can also refer to the FAQ's listed in the web sites below.
TiVo: http://www.tivo.com
You can also call Sony at 1-877-585-Sony (7669)

When you call either TiVo or Sony, you will need to reference your model and serial number located on the inside of the back cover of this Installation Guide.

Symptom	Solution

My SVR Recorder isn't making the setup phone calls.	• Do not use a wireless phone connection.
	• Verify that your phone line is working by connecting a phone to the phone cord and checking for a dial tone. Make sure the phone cord is connected to the SVR Recorder and the wall jack.
	• Try another local dial-in number from the **Dial In Numbers** screen. For information on how to change the local dial-in number and other phone dialing options, refer to the TiVo Viewer's Guide.
	• You may need to change your phone dialing options from the default. After making changes, make a test call (choose "Make Test Call" from the **Phone Connection** screen).
	  • If you have voice mail or other non-standard dial tone, turn off "dial tone detection".
	  • If you have call waiting, disable it by entering the correct prefix in "Call Waiting Prefix" (usually "*70,").
	  • If you use a dial prefix for outside lines, set "Dial Prefix" (for example, "9,").
	  • Your phone line may have low voltage. Try turning off "phone availability detection".
	• If you have a caller ID box, try removing it from the line since some models interfere with the SVR Recorder modem's ability to make a call.
	• If you have a fax machine or computer modem connected to the same line, make sure they are not using the line.
	• It could be that you have too much line noise to make a connection. The SVR Recorder ships with a 50' phone cord. Try a shorter cord, or you can buy a line noise filter at your local electronics store.
	• If the recorder repeatedly reports a busy signal trying to connect, try choosing a different local dial-in number, or try making the call during off-peak hours.

Symptom	Solution
On the "Channels You Watch" screen, some or all of my lineup information is incorrect.	From within Guided Setup, go left to the **Cable Providers** and **Cable Lineups** screens and verify that you chose the correct cable/satellite provider and lineup. You may need to go through all of the selections to find the right one since cable providers are often changing their names and lineups.
My channels aren't changing. (continued on next page)	**If you use cable with no set-top box:** • Be sure that you are using the SVR Recorder's Remote Control and that you hold it so that the TiVo button points toward the SVR Recorder. • When you press any button on the Remote Control, does the Remote Active LED flash? If the LED does not flash, check to make sure that the batteries are positioned correctly in the Remote Control and that the batteries are good. If the LED does flash, make sure the green receiving light on the SVR Recorder flashes yellow when you press any button on the Remote Control. If it does not, power cycle your SVR Recorder (unplug the AC power cord, wait 15 seconds, then reinsert the AC power cord). It may be necessary to do this several times. **If you use cable with a set-top box:** • Make sure the set-top box is turned on. • Make sure you are using the Remote Control and that you hold it so that the TiVo button points toward the SVR Recorder, not the cable box. • Is the IR Control cable plugged into the lower IR jack on the back of the SVR Recorder? • Is the IR Emitter positioned so that it covers the IR receiver on the cable box? • Did you select a working code from the list of codes for your cable box during Guided Setup? To verify, use the TiVo button to go to **TiVo Central** -> **Messages & Setup** -> **Cable/Satellite Box** -> **Control Cable Setup**. Once you find a code that changes your channels, press SELECT to choose that code.

Symptom	Solution
My channels aren't changing. (continued)	**If you use a satellite set-top box with a Serial Control cable:** • Make sure the set-top box is turned on. • Is the Serial Control cable plugged into the upper serial jack on the back of the SVR Recorder? • Make sure that the Serial Control cable is connected to the "low speed data" jack on the back of the satellite set-top box. • Unplug the satellite set-top box from the wall, then plug it back in. If you are using an RCA satellite set-top box, use your RCA set-top box's remote control to specify low speed data. To do this, press the MENU button on the RCA set-top box's remote -> **Options** -> **System Options** -> **Data Port** -> **Low Speed Data**. **If you use a satellite set-top box with an IR Control cable:** • Make sure the set-top box is turned on. • Is the IR Control cable plugged into the lower IR jack on the back of the SVR Recorder, not the cable box. • Is the IR Emitter positioned so that it covers the IR window on your satellite box? • Did you select a working code from the list of codes for your satellite box during Guided Setup? To verify this, use the TiVo button to go to **TiVo Central** -> **Messages & Setup** -> **Cable/Satellite Box** -> **Control Cable Setup**. Once you find a code that changes your channels, press the SELECT button on the Remote Control to choose that code.

Symptom	Solution
When I power on my TV, I see a blue screen with a frowning TiVo in the upper left corner of my screen.	Your SVR Recorder is having trouble tuning to the channel you are on. Follow these steps to restore the video: • If you have a cable/satellite set-top box, make sure it is turned on. • Try changing channels. If you see the frowning TiVo on every channel, your video cable may have come loose. Check to make sure all the cable connections on the back of your SVR Recorder are secure. • Verify that you are receiving a video signal by temporarily connecting the video source directly to the TV. • Power cycle your SVR Recorder (unplug the AC power cord, wait 15 seconds, then reinsert the AC power cord). • Try swapping out your video cables to determine if one of your cables is bad. • Go to Messages and Setup and choose "Cable/Satellite Box," then choose "Connection to Recorder." Verify that the cable that is selected on this screen is the same cable you have used to connect your set-top box to the SVR Recorder. The "Video Status" on this screen should say "OK" when the correct input is selected.
I don't see my cable provider on the list in Guided Setup.	• If you are in Guided Setup, use the LEFT ARROW to go to the **Zip Code** screen to verify that you entered the correct zip code. • Go through the first setup call again. See "First Setup Call" in Guided Setup. • Check all of the cable providers listed for your Zip Code. Make sure your cable company hasn't merged or changed its name.

Symptom	Solution
Audio/Video is out of sync.	• Try changing channels. • Press the PAUSE button on the Remote Control, move back a frame or two, then press PAUSE again to resume play. • Press the TiVo button to go to TiVo Central, then press the LIVE TV button to return to live television. • Power cycle your SVR Recorder (unplug the power cord, wait 15 seconds, then reinsert the power cord). • If you are using your stereo, it must be hooked up between the SVR Recorder and your TV to avoid an audio/video delay.

Specifications

Inputs and outputs

Video In
- S-Video 4-pin mini DIN (1)
- Composite Video RCA (1)

Video Out
- S-Video 4-pin mini DIN (2)
- Composite Video RCA (2)

Audio Line In
- Stereo L/R RCA (1 pair)

Audio Line Out
- Stereo L/R RCA (2 pairs)

RF In
- F-connector Female (1)

RF Out
- F-connector Female (1)

Telephone
- RJ-11 female, 2 wire (1)

Control Out
- 3.5 mm mini jack sockets (2)

General

Power requirements
- 120 V AC, 60 Hz

Power consumption
- 29 W

Operating temperature
- 21°C to 45°C (70°F to 113°F)

Operating Humidity
- 5% to 80%

Dimensions
- Approx. 430 × 326 × 77 mm (w/h/d)
- (Approx. 17 1/4 × 3 7/8 × 13 1/8 inches) including projecting parts and controls

Mass
- Approx. 4.5 kg (9 lb 1 oz)

Supplied accessories

Remote Control (1)
Size AA (R6) batteries (2)
Audio/Video cables (1)
IR Control cable (two IR emitters) (2)
Serial Control cable (1)
S-Video cable (1)
Phone cord (1)
Phone splitter (1)

FCC Regulations and Information

This device complies with Part 68 of the FCC rules. The FCC Part 68 label is located on the back of this product. This label contains the FCC number for this equipment and the Ringer Equivalence Number (REN). If requested, this information must be provided to your telephone company.

Your SVR Recorder has been registered by the Federal Communication Commission (FCC) as not being harmful to the telephone network when connected directly to the telephone lines. In order to fully comply with the Rules of the FCC, the following instructions should be read carefully and followed completely where applicable:

1 The Federal Communication Commission (FCC) has established Rules which permit this device to be directly connected to the telephone network. Standardized jacks are used for these connections. This equipment should not be used on party lines or coin phones.

2 If this device is malfunctioning, it may also be causing harm to the telephone network; this device should be disconnected until the source of the problem can be determined and until repair has been made. If this is not done, the telephone company may temporarily disconnect service.

3 The telephone company may make changes in its technical operations and procedures; if such changes affect the compatibility or use of this device, the telephone company is required to give adequate notice of the changes. You will be advised of your right to file a complaint with the FCC.

4 If the telephone company requests information on what equipment is connected to their lines, inform them of:

a. The telephone number to which this unit is connected.
b. The ringer equivalence number.
c. The USOC jack required.
d. The FCC Registration Number.

5 Items (b) and (d) are indicated on the label. The Ringer Equivalence Number (REN) is used to determine how many devices can be connected to your telephone line. In most areas, the sum of the RENs of all devices on any one line should not exceed five (5). If too many devices are attached, they may not ring properly.

Service Requirements

In the event of equipment malfunction, all repairs should be performed by Sony or an authorized agent. It is the responsibility of users requiring service to report the need for service to our company or to one of our authorized agents. For service, call 1-877-585-SONY (7669).

Declaration of Conformity

Trade Name:	Sony
Model No.:	SVR-3000
Responsible Party:	Sony Electronics Inc.
Address:	1 Sony Drive, Park Ridge, NJ 07656 USA
Telephone No.:	201-930-6972

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Radio Interference Information

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception (which you can determine by turning the equipment off and on), you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna (the antenna for radio or television that is receiving the interference)
- Change the position of the SVR Recorder with respect to the radio or television equipment that is receiving the interference
- Move the SVR Recorder away from the equipment that is receiving the interference
- Plug the SVR Recorder into a different outlet so that the SVR Recorder and the equipment receiving the interference are on different branch circuits

Shielded I/O cable and cords must be used for this equipment to comply with the relevant FCC regulations. Changes or modifications not expressly approved in writing by Sony Electronics, Inc., void the user's authority to operate this equipment.
If these measures do not eliminate the interference, you should consult your SVR Recorder dealer or an experienced radio/television technician for additional suggestions. In addition, you may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, D.C., 20402 Stock No. 004-000-00345-4.

IMPORTANT SAFETY INSTRUCTIONS

1 Read these instructions.

2 Keep these instructions.

3 Heed all warnings.

4 Follow all instructions.

5 Do not use this apparatus near water.

6 Clean only with dry cloth.

7 Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8 Do not install near any heat sources such as radiators, heat resisters, stoves, or other apparatus (including amplifiers) that produce heat.

9 Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10 Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11 Only use attachments/ accessories specified by the manufacturer.

12 Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13 Unplug this apparatus during lighting storms or when unused for long periods of time.

14 Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

SONY

LIMITED WARRANTY

Sony Electronics Inc. ("Sony") warrants this Product (including any accessories) against defects in material or workmanship as follows:

1. LABOR: For a period of 90 days from the date of purchase. If this Product is determined to be defective, Sony will repair or replace the Product, at its option, at no charge, or pay the labor charges to any Sony authorized service facility. After the Warranty Period, you must pay for the labor charges.

2. PARTS: In addition, Sony will supply, at no charge, new or rebuilt replacements in exchange for defective parts for a period of one (1) year. After 90 days from the date of purchase, labor for removal and installation is available from Sony authorized service facilities or a Sony Service Center at your expense.

To obtain warranty service, you must take the Product, or deliver the Product freight prepaid, in either its original packaging or packaging affording an equal degree of protection to any authorized Sony service facility.

This warranty does not cover customer, instruction, installation, set up adjustments, or signal reception problems.

This warranty does not cover cosmetic damage, or damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or modification of, or to any part of the Product, including the antenna. This warranty does not cover damage due to improper operation or maintenance, connection to improper voltage supply, or attempted repair by anyone other than a facility authorized by Sony to service the Product. This warranty is valid only in the United States.

Proof of purchase in the form of a bill of sale or receipted invoice which is evidence that the unit is within the warranty period must be presented to obtain warranty service.

This warranty is invalid if the factory-applied serial number has been altered or removed from the Product.

REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE CONSUMER. SONY SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THIS ACCESSORY. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS ACCESSORY IS LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. In addition, if you enter into a service contract with the Sony Partnership within 90 days of the date of sale, the limitation on how long an implied warranty lasts does not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

For your convenience, Sony Electronics Inc. has established telephone numbers for frequently asked questions.

To locate the servicer or dealer nearest you, or for service assistance or resolution of a service problem, or for product information or operation, call:

Sony Direct Response Center
1-877-585-SONY (7669)
or write to:
Sony Direct Response Center
12451 Gateway Blvd.
Fort Myers, FL 33913

For an accessory or an accessory or part not available from your authorized dealer, call:
1-(800)-488-7669

Printed in USA

Refer to this Installation Guide (specifically the Troubleshooting section) for questions about your Warranty, connecting the SVR Recorder, initial Guided Setup difficulties (e.g. phone calls failing), programming the Remote Control, changing channels, or if your system does not function properly after restart.
If you still have questions, contact Sony at:
http://www.sel.sony.com/sel/service/conselec

Refer to The TiVo Viewer's Guide for questions about TiVo Service activation, getting correct channel lineups or program guide data, or on-screen messages from TiVo regarding your Service account.
If you still have questions, contact TiVo at:
http://www.tivo.com

Printed in Japan

PRINTING THE SERVICE MANUAL

The PDF of this service manual is not designed to be printed from cover to cover. The pages vary in size, and must therefore be printed in sections based on page dimensions.

NON-SCHEMATIC PAGES

Data that does NOT INCLUDE schematic diagrams are formatted to 8.5 x 11 inches and can be printed on standard letter-size and/or A4-sized paper.

SCHEMATIC DIAGRAMS

The schematic diagram pages are provided in two ways, full size and tiled. The full-sized schematic diagrams are formatted on paper sizes between 8.5" x 11" and 18" x 30" depending upon each individual diagram size. Those diagrams that are LARGER than 11" x 17" in full-size mode have been tiled for your convience and can be printed on standard 11" x 17" (tabloid-size) paper, and reassembled.

TO PRINT FULL SIZE SCHEMATIC DIAGRAMS

If you have access to a large paper plotter or printer capable of outputting the full-sized diagrams, output as follows:

1) Note the page size(s) of the schematics you want to output as indicated in the middle window at the bottom of the viewing screen.

2) Go to the File menu and select Print Set-up. Choose the printer name and driver for your large format printer. Confirm that the printer settings are set to output the indicated page size or larger.

3) Close the Print Set Up screen and return to the File menu. Select "Print..." Input the page number of the schematic(s) you want to print in the print range window. Choose OK.

TO PRINT TILED VERSION OF SCHEMATICS

Schematic pages that are larger than 11" x 17" full-size are provided in a 11" x 17" printable tiled format near the end of the document. These can be printed to tabloid-sized paper and assembled to full-size for easy viewing.

If you have access to a printer capable of outputting the tabloid size (11" x 17") paper, then output the tiled version of the diagram as follows:

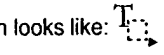
1) Note the page number(s) of the schematics you want to output as indicated in the middle window at the bottom of the viewing screen.

2) Go to the File menu and select Print Set-up. Choose the printer name and driver for your printer. Confirm that the plotter settings are set to output 11" x 17", or tabloid size paper in landscape (▭) mode.

3) Close the Print Set Up screen and return to the File menu. Select "Print..." Input the page number of the schematic(s) you want to print in the print range window. Choose OK.

TO PRINT SPECIFIC SECTIONS OF A SCHEMATIC

To print just a particular section of a PDF, rather than a full page, access the Graphics Select tool in the Acrobat Reader tool bar.

1) To view the Graphics Select Tool, press and HOLD the mouse button over the Text Select Tool which looks like: 
This tool will expand to reveal to additional tools.
Choose the Graphics Select tool by placing the cursor over the button on of the far right that looks like:

2) After selecting the Graphics Select Tool, place your cursor in the document window and the cursor will change to a plus (+) symbol. Click and drag the cursor over the area you want to print. When you release the mouse button, a marquee (or dotted lined box) will be displayed outlining the area you selected.

3) With the marquee in place, go to the file menu and select the "Print..." option. When the print window appears, choose the option under the section called "Print Range" which says "Selected Graphic".

Select OK and the output will print only the area that you outlined with the marquee.

(continued >)

ON-SCREEN SEARCH OPTION

All of the text within the service manual PDF is content searchable. This means that you can enter any text, word, phrase or reference number that appears in the manual, and the PDF software will search, find and move the cursor to the location where you requested text first appears. This feature can be particularly useful in locating components on a specific schematic or printed wire circuit board (PWB) diagrams.

Follow these steps to effectively locate a component on a schematic diagram:

1) Locate the schematic you want to search by clicking on the corresponding bookmark on the left side of the screen. The view on the right of the screen will then jump to the desired schematic page.

2) Magnify the diagram to at least 400% before conducting a component search. This will enable you to easily view the reference number when it is highlighted on screen. To do this, click on the magnifying glass button on the tool bar at the top of the screen. Move the cursor over the diagram and RIGHT click you mouse. Select the 400% magnification option on the pop-up menu. Click on the button with the icon of the open hand to deactivate the magnification tool

3) Search the diagram (or the entire manual) by clicking on the binocular button tool at the top of the screen. The "Find" window will appear and allow you to type in your desired text. Type in a reference designator, such as R502, and click on the "Find" button. If the component is not on the diagram, but is listed anywhere else in the manual, the cursor will jump to the first location the text is found in the file. To find another instance of that same text, click on the binocular button again and select "Find Again."

Self Diagnosis Supported model

SERVICE MANUAL

SVR-3000 RMT-V303

US Model

CORRECTION- 1

SUBJECT: ELECTRICAL PARTS BATTERY COVER P/N

Correct the service manual as shown.
File this Correction with the service manual.

☛ : Corrected Item

Section 4: Electrical Parts List (Page 54)

INCORRECT

REF. NO.	PART NO.	DESCRIPTION	VALUES
	TBD	BATTERY COVER (FOR RMT-V303)	

CORRECT

REF. NO.	PART NO.	DESCRIPTION	VALUES
☛	9-885-030-45	BATTERY COVER (FOR RMT-V303)	

Design and specifications are subject to change without notice.

DIGITAL NETWORK RECORDER

SONY®

9-965-936-91

Self Diagnosis Supported model

SERVICE MANUAL

SVR-3000 RMT-V303

US Model

CORRECTION- 2

SUBJECT: IC600 ADDED TO ELECTRICAL PARTS LIST

Correct the service manual as shown.
File this Correction with the service manual.

☛ : Corrected Item

Section 4: Electrical Parts List (Page 46)

INCORRECT			
REF. NO.	PART NO.	DESCRIPTION	VALUES
	Needs to be added		

CORRECT			
REF. NO.	PART NO.	DESCRIPTION	VALUES
☛ IC600	6-702-191-01	IC BCM7020RKPB1-P21	

Design and specifications are subject to change without notice.

DIGITAL NETWORK RECORDER

SONY

9-965-936-92

HISTORY [illegible]RMATION FOR THE FOLLOW[illegible]MANUAL:

SERVICE MANUAL

SVR-3000 RMT-V303

US Model

ORIGINAL MANUAL ISSUE DATE: 12/2002

ALL REVISIONS AND UPDATES TO THE ORIGINAL MANUAL ARE APPENDED TO THE END OF THE PDF FILE.

REVISION DATE	REVISION TYPE	SUBJECT
12/2002	No revisions or updates are applicable at this time.	
12/2002	Correction-1	Added P/N for Battery Cover (Replaced Page 54)
1/2003	Correction-2	IC600 added to Electrical Parts List

Design and specifications are subject to change without notice.

DIGITAL NETWORK RECORDER

SONY®

9-965-936-03

Viewer's Guide

How to activate and use your TiVo® Service

Welcome to TiVo®!

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▸▸ Welcome to the TiVolution®!

TiVo, TV your way.™

It's a revolution in television. We've pioneered an exciting new category that will forever change the way you watch TV. With a new TiVo Digital Video Recorder in your living room, you'll quickly see how easy it is to watch what you want, when you want.

Never miss your favorite show again.

TiVo automatically records every episode of your favorite series, all season long, even if the network schedule changes. It can even skip reruns.

No more interruptions.

Pause live TV for as long as 30 minutes—any channel, any time. You can also rewind, instant replay, and slow-motion live or recorded TV. Wow!

No videotapes required.

Because it's all-digital, TiVo saves all your programs in one place so they're ready-to-watch anytime. You can even start watching a show from the beginning while it's still recording.

Watch more of what you like, less of what you don't.

Because the TiVo service is "smart," it automatically finds and records shows that feature your favorite actor, team, hobby, etc., so you'll always catch the good stuff—even if you never knew it was on.

At last, TV fits into your busy life, not the other way around.

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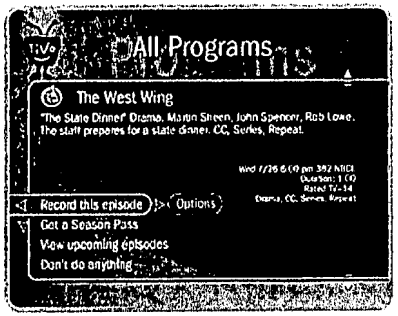
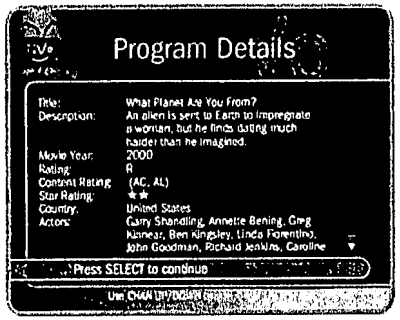
You will see important and helpful notes and tips in this side column.



This is a Program Information screen. It has a description of the program and a list of actions you can select.



On a Program Information screen, press INFO (or DISPLAY if you don't have an INFO button on your remote) to see the Program Details screen.

▸▸ Using This Guide

▸ Getting Started

1. Activate the TiVo service (see page 2 for more on activating).
2. Connect your recorder using the *Start Here* booklet and *Installation Guide*.
3. Complete Guided Setup following the steps provided in Chapter 1 of this guide.

When you've finished these three steps, you're ready to use the TiVo service. Take the tours in Chapter 2 of this guide to check out the basic features. Read Chapters 3, 4, and 5 to become more familiar with the service's capabilities or to answer specific questions.

Basic terms. These are terms used in this guide when we talk about the rest of the service:

Live TV: If you're watching a program as it's being broadcast, you're watching live TV. With TiVo, you can also watch recorded programs or watch "behind" live TV (for example: if you pause live TV, then come back later and watch from the paused spot).

Icons: These are graphic symbols used in the TiVo service to provide information and options you can select. You'll find a glossary of icons on the inside back cover.

Program Information screen: When you select a program (either a future showing or a recording in Now Playing) from a list, you will see this type of screen. With it you can select actions and view a description of the program.

▸ Service Updates

A few features described in this manual (such as "Skip to Tick," the Program Details screen, and using an asterisk (*) in a WishList™ search) may not be available when you first start your recorder. If not, they'll arrive as part of your first TiVo service update. TiVo subscribers automatically receive service updates. Details about recent service updates are available at *www.tivo.com/support*. Updates happen automatically. You don't need to do a thing!

CHAPTER 1

Guided Setup

Activating the TiVo Service 2

Basic Steps 3

Your TiVo service number is a 15-digit number found on the label on the back of your recorder.

▶▶ Activating the TiVo Service

To activate your TiVo service, visit the TiVo website at *www.tivo.com/activate/* or call 1-877-367-8486. When you activate, you will register the TiVo service number of your recorder and choose a billing option.

The TiVo service includes the program information shown in the TiVo Live Guide and used by Season Pass™ recordings, WishList searches, and Search by Title, as well as TiVolution Magazine, Showcases, and Service Updates.

If you do not activate within about a week of completing Guided Setup, your recorder will have limited functionality. The recorder was designed to be used exclusively with the TiVo service. The TiVo service is required for proper operation of the recorder. No functionality is represented, warranted, or should be expected without a subscription to the TiVo service.

Activate now! Don't miss a single day of using the TiVo service.

▸▸ Basic Steps

After you connect your recorder to your TV and activate the TiVo service, you will need to complete Guided Setup, which takes about 1 hour. (For more information about connecting your recorder, see the *Start Here* booklet and the *Installation Guide*.)

- **Guided Setup is easy.** The Guided Setup screens step you through the process. If you get stuck, look for tips and troubleshooting in this chapter. (You may not see all the screens described here, or you may see them in a different order, depending on your equipment.)

  If you make a mistake during Guided Setup, simply press LEFT arrow to go back and fix it. You can also change your setup information later in Messages & Setup. (See Chapter 5 for details.)

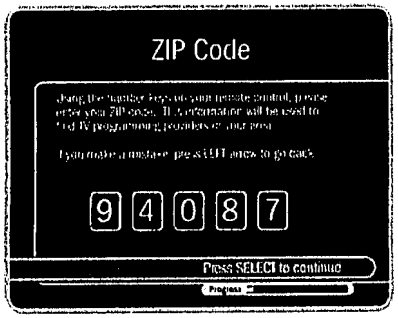
- **Guided Setup is intelligent.** In Guided Setup, you tell your recorder your program source (antenna, cable, or satellite) and equipment setup. Then you will only have to complete the steps that apply to your particular setup.

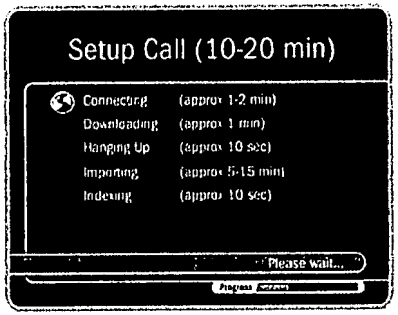
- **Guided Setup requires two phone calls.** Try to complete Guided Setup when you don't need the phone for an hour or so.

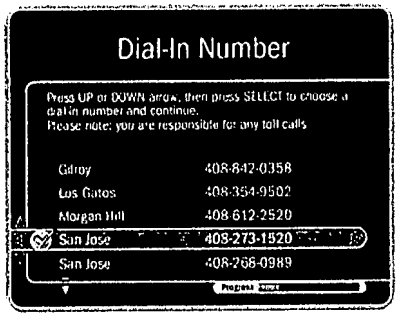
After completing Guided Setup, you can watch live TV and use TiVo service features to control live TV. You will have to wait a few hours while the recorder organizes information before you can set up your Season Pass recordings and search for programs (see page 8 for details).

If you can't find the help you need in this chapter, please visit online TiVo Customer Support at *www.tivo.com/support* or call us. (Refer to the *Installation Guide* for Customer Support contact information.)

If you need to use the phone during either of the setup phone calls, pick up your telephone, then hang it up and wait a few seconds. The recorder will hang up, and the next time you pick the phone up there will be a dial tone. You will need to re-initiate the phone calls later.

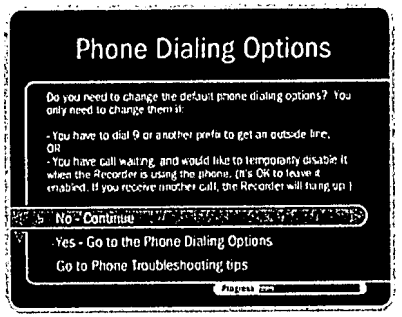






▶ Tips and Troubleshooting

Zip Code. Antenna users: The TiVo service uses the channel lineup of a nearby cable service to determine which channels you receive. If there is no cable company that serves your zip code, enter the zip code of a nearby community that has cable service.



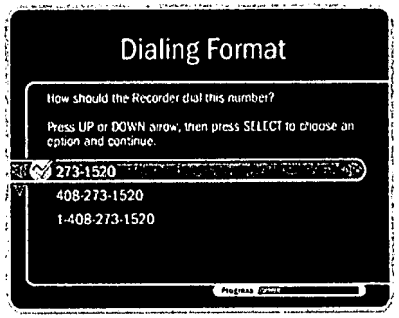
Phone Dialing Options. If your phone system requires special dialing options, choose "Yes." (For example: do you dial "9" to get an outside line?) Most people won't need to change the settings. If you're not sure, or if you need help with specific dialing options, see page 63 for information about each option.

Setup Call. This toll-free call takes a few minutes to retrieve the dial-in numbers for your area code and the list of cable or satellite providers for your zip code. After hanging up, the recorder will take 5 to 15 minutes to organize the information. If the call doesn't succeed, see pages 73 to 74 for troubleshooting steps.

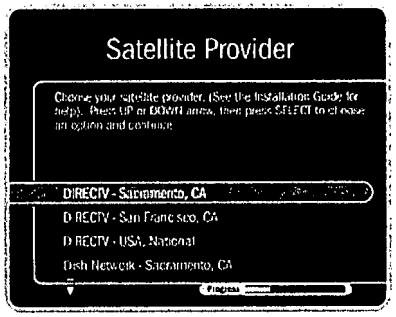
Dial-In Number. The recorder will use the dial-in number you choose for its daily calls to the TiVo service. The list may be too long to fit on one screen. To see more phone numbers, press the DOWN arrow or CHAN DOWN.

Note: TiVo uses a standard telephone line to provide the TiVo service and is available as a local call in most areas. In some areas, however, local and long distance toll charges may apply. You are responsible for any such telephone charges.

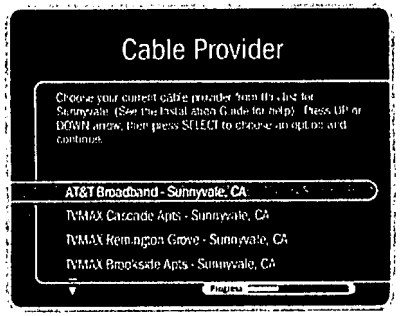
Dialing Format. Choose how you want the recorder to dial the dial-in number. (For example: should the dial-in number be preceded by your area code and should a "1" precede the area code?) In some areas, local numbers must be dialed using the area code.



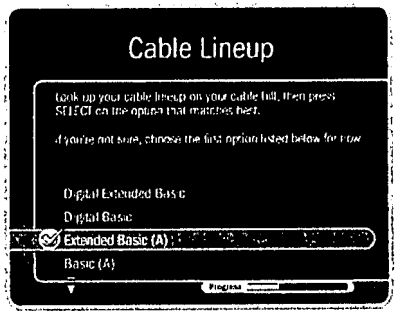
Satellite Provider. If you subscribe to additional local channels for your city or a nearby city from DIRECTV, choose the DIRECTV option followed by the city name from which you get your local channels (e.g., DIRECTV-Boston).



Cable Providers. Cable companies may have entries with very similar names, and it may be difficult to know which is yours. Check your channel lineup card (received during cable installation) or your cable bill. If you aren't sure, make your best guess. Later in Guided Setup, you can check your guess on the Channels You Receive screen (see page 6). If you still don't see your provider, go back and verify that you entered the correct zip code.

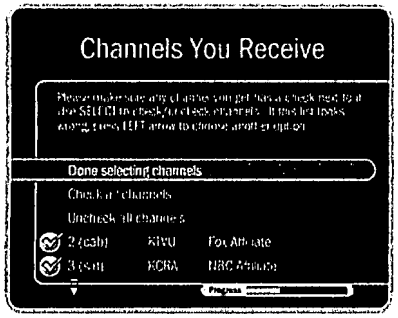


Cable Lineups. A lineup is the type of subscription you purchased from your cable company. Lineups usually have names like "Basic" or "Extended Basic." Your cable bill may have this information. If you still aren't sure, make your best guess. Later in Guided Setup, you can check your guess on the Channels You Receive screen (see page 6).



"Rebuild" is a term TiVo uses to refer to a revised lineup. Usually you would be informed by your cable company that your lineup has been revised.

If you have a cable A/B system, you can pick only A or B to watch with your recorder. Check your *Installation Guide* for information about splitting your signal in order to watch the other channels.



Use the CHAN UP/DOWN button as a shortcut to go up or down a whole screen at a time.

Channels You Receive. First, if you had to make a guess about your provider or lineup, verify that the channel numbers match the networks on this list. (For example, if you had the lineup to the left, is channel 2 actually KTVU?) If you aren't sure, refer to the channel guide or quick-reference card from your cable or satellite company.

Next, add or remove check marks—so that the list reflects the channels you actually subscribe to—by highlighting a channel and pressing SELECT. (Some types of satellite boxs will get stuck on channels you don't receive if they are selected here, so be sure to de-select the channels you don't receive.)

You can also customize this channel list to reflect your viewing preferences. If you never watch a particular channel, and don't plan to set up recordings or let TiVo search for programs on it, remove the check mark next to that channel.

The TiVo service will search for programs on the check marked channels only. Also, the CHAN UP/DOWN button skips channels that don't have a check mark in this list.

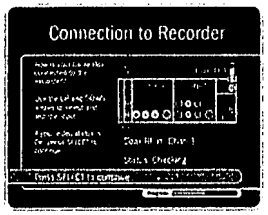
Finally, highlight Done Selecting Channels and press SELECT to continue. If you change your mind, you can easily make changes after you finish Guided Setup. (See page 59.)

Connection to Recorder Screens. These screens ask what type of video cable you used to connect your cable or satellite box to your recorder. Choose your configuration from the three choices described on page 7 (Hint: the first one is the most common).

Channel Changing. Your recorder needs to send a signal to the cable or satellite box to change channels. It can do this through an IR (infrared) or serial connection. Make sure that the connection described on this screen matches what you have used to connect your cable or satellite box to your recorder. For help choosing and setting up a connection, see your *Start Here* booklet and *Installation Guide.* After Guided Setup, if your channels don't change, see troubleshooting steps on page 76.

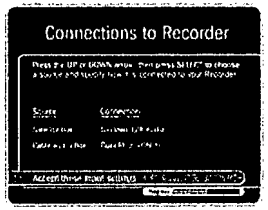
1

Satellite only or cable with a box only:



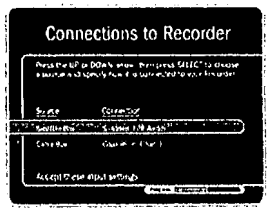
* Use the UP/DOWN arrows until the picture of the recorder matches the cable connection you used to connect your satellite or cable box. When the video status below the picture says "Video OK," press SELECT to continue. If the video status says "No Video," double-check that the video cable is firmly connected to the recorder and that you have selected the correct type of video cable.

Satellite & antenna or satellite & cable without a box:



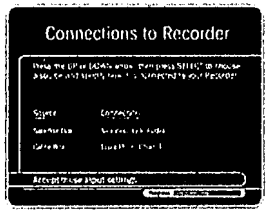
1. Use the UP/DOWN arrows to highlight "Satellite Box" and press SELECT.

2. Follow the directions at the top of this page (marked with *).

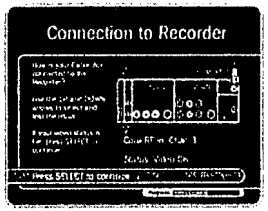


3. Use the DOWN arrow to highlight "Accept these input settings" and press SELECT

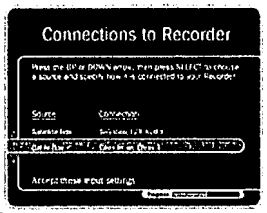
Satellite & cable with a box:



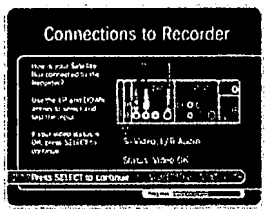
1. Highlight "Satellite Box" and press SELECT.



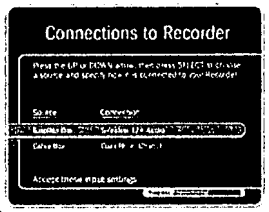
2. Follow the directions at the top of this page (marked with *).



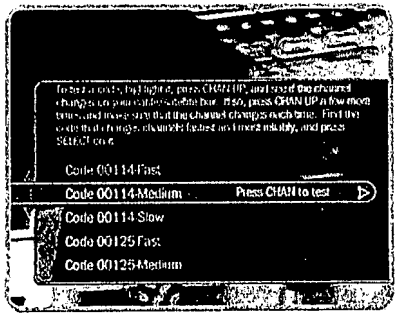
3. Highlight "Cable Box" and press SELECT.

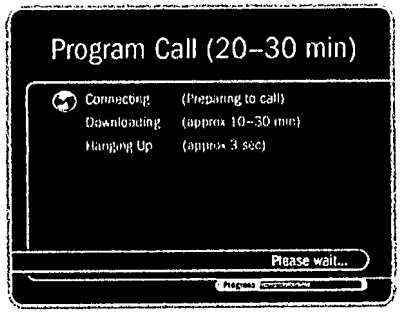


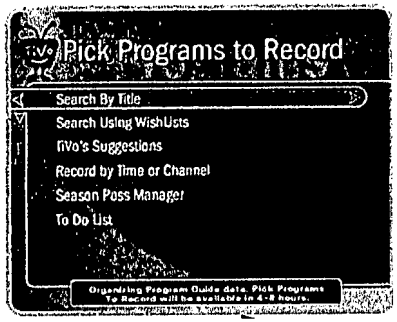
4. Follow the directions at the top of this page (marked with *).



5. Highlight "Accept these input settings" and press SELECT.







IR Code List. If you use an IR connection, the recorder will need to send a code to your cable or satellite box in order to change channels. You will need to test these codes to see which works best with your connection. Each code has a slow, medium, and fast version. First, test the slow codes by highlighting them and pressing the CHAN UP/DOWN button slowly several times. When you find a slow code that changes channels every time, try a faster speed for that code. (Slow may take longer, but fast may be too fast for your cable or satellite box.) You want to find the code with the fastest speed that changes the channel every time. When you find it, press SELECT to choose that code. If channels don't change at all, see page 76 for troubleshooting steps.

Program Call. During this call, the TiVo service downloads all your program information—which includes program titles, times, channels, and descriptions—for up to the next two weeks. If the call doesn't succeed, see pages 73 to 74 for troubleshooting steps. If you need to use the phone, pick up your telephone, then hang it up and wait a few seconds. The recorder will hang up. You will need to re-initiate the program call later.

Congratulations! Once you have activated your TiVo service and completed Guided Setup, you'll see the Congratulations! screen. If you have not yet activated your TiVo service, you will be reminded to do so at this time.

You can immediately begin watching live TV and using your recorder's features to control live TV (pause, instant replay, slow motion). The recorder works behind the scenes for about four to eight hours to organize program information for the first time. During this process, you will have to wait to search for programs, set up recordings, and view information in the TiVo Live Guide. A message at the bottom of the Pick Programs to Record screen will warn you if you are not able to search for programs yet. If the message appears, try again after a few hours.

Press the TiVo button on your remote control to go to TiVo Central® to begin enjoying the TiVo service. For help getting started, check out the tours in Chapter 2 of this guide.

CHAPTER 2

The Basics in 5 Short Tours

Tour One: Play with Live TV 10

Tour Two: The TiVo Live Guide 12

Tour Three: Find and Record Your Favorite Programs 14

Tour Four: Find New Programs 16

Tour Five: Now Playing 18

Cool Things You Can Do 20

▶▶ Tour One: Play with Live TV

In this tour, you'll take a look at how you can control live TV. So turn on your TV and grab your TiVo remote!

(II) First, press the PAUSE button—the program you're watching pauses. Now you can stand up and stretch, or go to the kitchen and get a snack. You can pause live TV for up to 30 minutes!

(▶) But for now, press PLAY and the program resumes.

◀◀ Next, press BACK—the program rewinds. Press BACK a second time—it goes faster! A third time—faster still! Both the FWD and BACK buttons have three speeds. Press BACK a fourth time (or press PLAY at any time) to return to normal speed.

(II) + ▶▶ Press PAUSE once more, then immediately press FWD—frame-by-frame forward! Press BACK—frame-by-frame back. When your show is paused, FWD and BACK let you go frame by frame. Press PLAY to resume watching at normal speed.

(↺) Try out the INSTANT REPLAY button. INSTANT REPLAY jumps you back 8 seconds—useful for when you miss a great sports play or a bit of dialog, or for when you fast forward too far.

(I▶) Press INSTANT REPLAY again, then immediately press SLOW. You get your own slow-motion replay!

(▶I) Finally, try the ADVANCE button. Presto! You're caught up to live TV.

Status Bar

Press PAUSE to make the status bar visible. It shows a one-hour period. The green segment is the portion of the current hour that has been saved by your recorder.

Look for the white line. It marks the part of the program you are currently watching. If the white line is anywhere back in the green segment you are "behind" real time (which is way better than being behind the times!).

Now press CHAN UP. When you change channels, the saved programming from the old channel is cleared, and the recorder starts to save what is showing on the new channel.

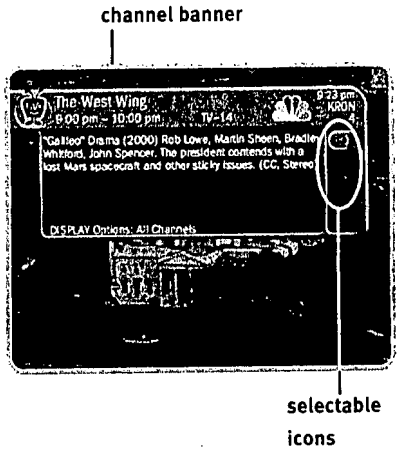
Channel Banner

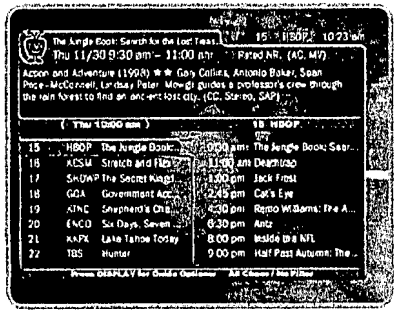
Press INFO (or DISPLAY if your remote does not have an INFO button) to see the channel banner. (You can also press RIGHT arrow.) It's only there for a few seconds, but you can bring it back by pressing INFO (or DISPLAY) again. While the banner is visible, press RIGHT arrow to switch from a small, to medium, to large banner. Note that each version has a different amount of information.

Keep pressing RIGHT arrow until you see the largest version of the channel banner. Notice the small icons on the right side. Each symbol represents a useful feature, like recording or Parental Controls. Press the UP and DOWN arrows to highlight different icons. Pressing SELECT while an icon is highlighted will take you to that feature. (For more on using these icons, see page 28.)

Finally, press the CLEAR button—the channel banner disappears. (CLEAR gets rid of things that aren't part of the program you're watching.)

Now go have fun playing with live TV, then come back for the next tour!





▸▸ Tour Two: The TiVo Live Guide

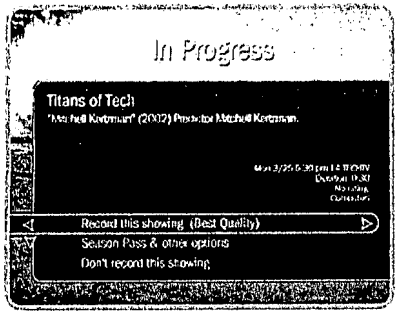
Your recorder's program guide, the TiVo Live Guide, lets you see what's on, change channels, schedule recordings, and more—all while you're watching live TV. Press the GUIDE button to see the TiVo Live Guide.

On the left side of the TiVo Live Guide, there is a list of channels and their current programs. The channel you're watching is highlighted with a blue bar, and a description of the current program appears at the top of the grid. On the right side is a list of upcoming programs on the highlighted channel.

▸ Choose a Program to Watch

See something you'd like to watch? Press the UP and DOWN arrows to move the highlight bar over it. (Notice that the description at the top and list of upcoming programs on the right side change.) Then press SELECT on the highlighted channel—the channel changes and the program guide disappears. Press the GUIDE button again to bring the guide back. (Remember, whenever you change channels, programming saved from the old channel is cleared, and the recorder starts to save what is showing on the new channel.)

When you record from live TV, you can record both the saved portion (up to the last half hour) and the rest of the program. See page 25 for details.



▸ Record a Program

You can always record the program you're watching by pressing the RECORD (●) button on your remote control. You can also use the TiVo Live Guide to record current or future programs. (See page 25 for more on recording from live TV.)

Highlight any program you see in the TiVo Live Guide and press RECORD. A transparent screen with recording choices appears. Choose an option or press LEFT arrow to go back to the TiVo Live Guide.

▶ Looking Ahead

While you're in the left side of TiVo Live Guide, press the FWD (▶▶) button to move the displayed time 30 minutes ahead. Try it. To go back in time, press BACK (◀◀).

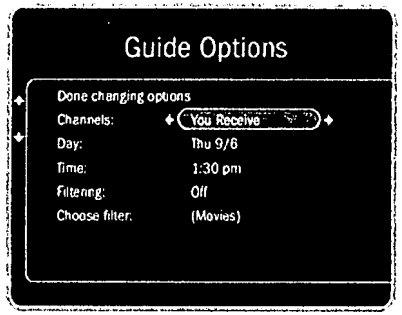
You can also quickly change the day and time the guide shows by changing the Guide Options. To see Guide Options, press GUIDE to display the TiVo Live Guide, then press INFO (or DISPLAY, if your remote control does not have an INFO button). To change the day, use DOWN arrow to highlight the day, then press RIGHT arrow once to choose tomorrow. Press SELECT. "Done changing options" becomes highlighted. Press SELECT again and *voilà!*, the TiVo Live Guide appears with tomorrow's program schedule. You know what this means: no more setting the VCR!

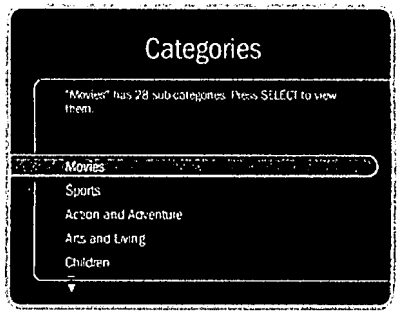
▶ Filter the TiVo Live Guide

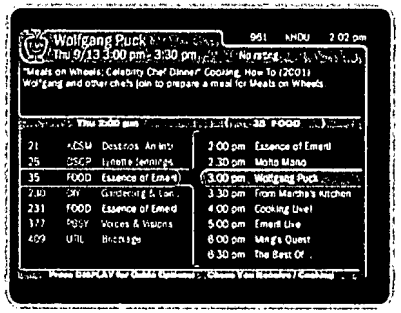
The TiVo Live Guide can also find specific kinds of shows for you. Display Guide Options by bringing up the guide and pressing DISPLAY. (If your remote doesn't have a DISPLAY button, press ENTER.) Then highlight "Choose Filter." Press SELECT and a list of categories appears. Select "Arts and Living" and then select the subcategory "Cooking." The Guide Options screen appears again and "Filtering" should now be "On." Select "Done changing options."

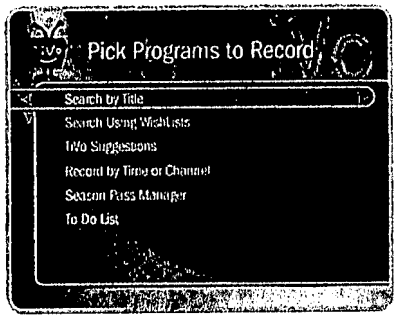
This time when the TiVo Live Guide appears, it only shows you channels airing cooking shows in the next six hours. It has grayed out programs that are not about cooking. To see all the channels again, go to Guide Options (press GUIDE, then DISPLAY or ENTER). Highlight "Filtering," and press LEFT arrow to turn it "Off." Then press SELECT.

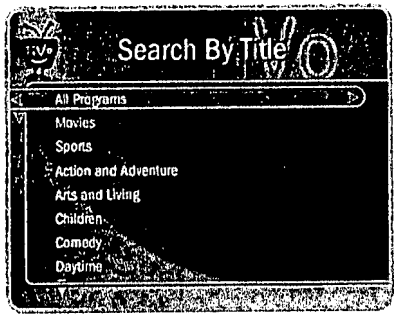
Take some time to play around in the TiVo Live Guide (and set up some recordings, while you're at it). See you in a little bit for the next tour!











If you just finished Guided Setup and you go to Pick Programs to Record, you will see a message at the bottom of the screen stating that the recorder is still indexing data. The recorder should be done indexing within 4 to 8 hours of finishing Guided Setup.

▸▸ Tour Three: Find and Record Your Favorite Programs

You can always record the program you're watching by pressing the RECORD button on your remote control. The TiVo service also provides many ways to quickly search large numbers of TV programs, find your favorites, and schedule recordings in advance. What's more, if a program is part of a series, you can get a Season Pass to the series. A Season Pass automatically records every episode of the series that airs on the selected channel, even if the time slot changes.

▸ Search by Title

In this tour, you'll find a program (*The Simpsons)* by searching for its title. Press the TiVo button to see TiVo Central. Press the DOWN arrow to highlight Pick Programs to Record and press SELECT. The Pick Programs to Record screen appears.

As you can see, TiVo gives you many ways to find programs. Since you know the program's title, highlight "Search by Title" and press SELECT. The next screen is a categories screen. It lets you limit your search to any of several categories—but for now, choose "All Programs," then press SELECT.

The next screen has a grid of letters. Notice the white box around the letter *A*. Use the RIGHT, LEFT, UP, and DOWN arrows to move the box among the letters. Now move it to *S*, then press SELECT.

A list of programs that begin with "S" appears on the right side of the screen. Move the white box to the letter *I* and press SELECT again. The list changes. The TiVo service has searched through all available programs (usually, those airing in the next two weeks) to find those that begin with *SI,* then listed those programs.

Keep on entering letters until you see "Simpsons, The" in the list on the right. (Notice, the list alphabetizes without "A" or "The.") If you make a mistake entering text, select DEL (on the screen) or press BACK on the remote control. To clear all text, use CLR on the screen or press the CLEAR button. (SP enters a space.)

To get to the list of programs, press RIGHT arrow until you move off the grid of letters. Press the UP or DOWN arrow to highlight "Simpsons, The" and press SELECT.

A Program Information screen appears. This kind of screen appears when you select a program title from a list and lets you choose to record the episode, view upcoming episodes, or get a Season Pass.

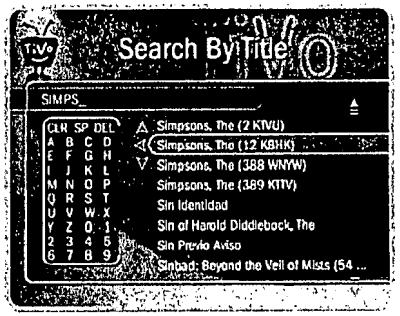
▶ Get a Season Pass

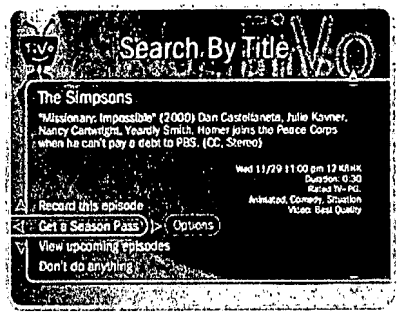
On the Program Information screen for *The Simpsons,* highlight "Get a Season Pass," and press SELECT. A confirmation screen appears to make sure the recorder is doing what you want. Press SELECT again—and after a short pause you have a Season Pass to *The Simpsons*!

You should now be on the Search by Title screen again. Press LEFT arrow to return to Pick Programs to Record, then select the To Do List. You can see all your scheduled recordings here.

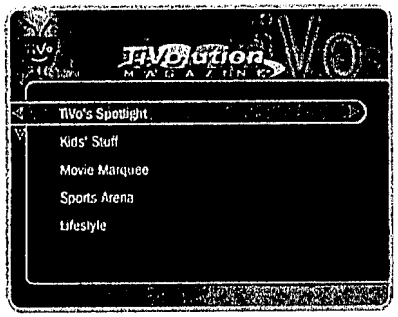
In the To Do List, notice the upcoming episodes of *The Simpsons* are marked with two check marks ( ), indicating they are part of a Season Pass. If you don't want to keep this Season Pass, highlight it and press CLEAR.

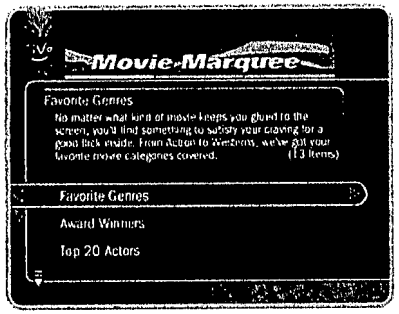
Set up some more Season Pass recordings now, or go on to the next tour to learn how TiVo helps you find new shows you might like—sort of like your own "smart" TV assistant.

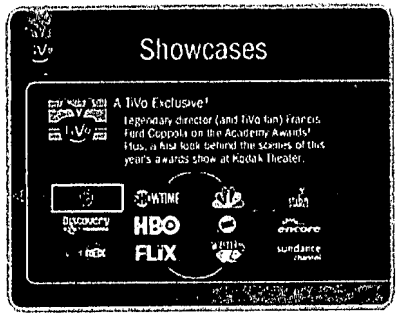




If you schedule a lot of Season Pass recordings, it's a good idea to set priorities for them. You do this with the Season Pass Manager; see page 49 for more information.







▸▸ Tour Four: Find New Programs

TiVo helps you find what you want to watch—both exciting new shows and old favorites you might have forgotten.

▸ TiVolution Magazine

You'll always find something fun and different in TiVolution Magazine, a guide to the best upcoming shows on television. You'll find premieres, specials, and offbeat gems, making it easy for you to schedule recordings. New content is delivered fresh to your recorder during the daily phone call.

To find TiVolution Magazine, press the TiVo button to go to TiVo Central. Use the DOWN arrow to highlight TiVolution Magazine, then press SELECT. Once you're inside, use the arrow buttons and SELECT to explore the selections. Once you get to a list of programs, select a title to see the Program Information screen. If you get the channel the program airs on, you can set up a recording here—it's that easy!

▸ Showcases

Showcases lists the best programs offered by television's biggest networks. The programs in Showcases are grouped in theme packages, giving you "one-stop shopping" convenience when browsing for programs to record. Packages include hit movies, exciting miniseries, hot specials, popular series, and shows featuring TV's biggest stars. Showcases is updated during your recorder's daily phone call. You can set up recordings in Showcases, much the same as in TiVolution Magazine.

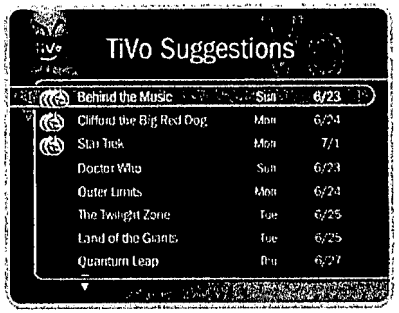
▶ TiVo Suggestions

TiVo Suggestions is a personalized list of shows selected to match your preferences. How is this magic possible? Any time you watch programs, live or pre-recorded, or browse programs with the TiVo Live Guide, you can rate them by pressing the THUMBS UP™ and THUMBS DOWN™ buttons (👎 👍). You can give a program up to three Thumbs Up or three Thumbs Down.

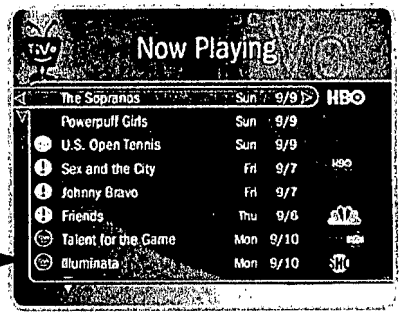
Over time, the more shows you rate, the better TiVo Suggestions will be at finding programs you like. The suggestions are listed under TiVo Suggestions in order of how closely they match your preferences.

Try it out: Press GUIDE to bring up the TiVo Live Guide. Highlight a few programs and rate them by pressing the THUMBS UP or THUMBS DOWN buttons. Then go to TiVo Central, then Pick Programs to Record, then TiVo Suggestions. Suggested programs based on your ratings appear in TiVo Suggestions. (If you don't see programs yet, come back later—it may take a few hours the first time.) You can press SELECT on a suggestion, then set up a recording.

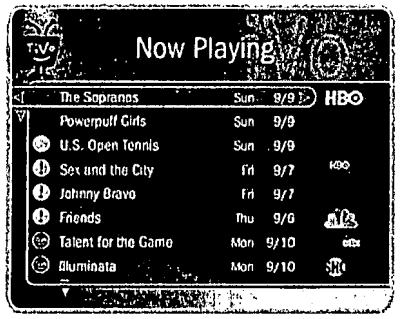
As an added bonus, when the recorder has empty space, it may automatically record some of TiVo Suggestions. You will find them at the bottom of Now Playing, below programs you requested. TiVo Suggestions never replace shows you request or prevent them from being recorded. TiVo Suggestions are also always the first programs deleted to make room for recordings you request.

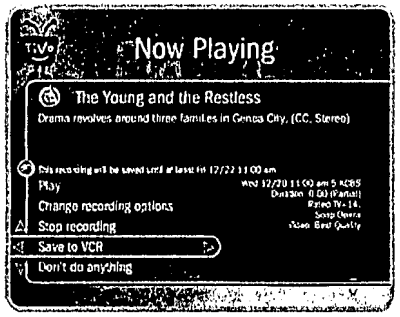


Your personal TV preferences are just that: personal. See the TiVo Privacy Policy in Chapter 7, and the Federal Trade Commission (FTC) White Paper available at *www.tivo.com/privacy* for more information.



This icon indicates that the program was recorded as a Suggestion.





▸▸ Tour Five: Now Playing

Your recorder can record many hours of programming (enough to fill a slew of video tapes!). Fortunately, it also labels and organizes all those saved programs. Unlike using a VCR, Now Playing gives you instant access to all recorded programs—no need to spend time searching for an episode on that tape you thought you used.

To go to Now Playing, just press the TiVo button twice. Your new recorder may already contain some entertaining short programs. A network logo to the right of the show tells you which network brings you the program.

An icon like this one to the left of the program's title tells you the recording's current status (see the inside back cover for a glossary of these icons).

Programs you request will appear in Now Playing the moment recording begins. The most recently recorded shows appear at the top of the list. You can watch any title in Now Playing—even one that is still being recorded—by highlighting it, then pressing the PLAY button.

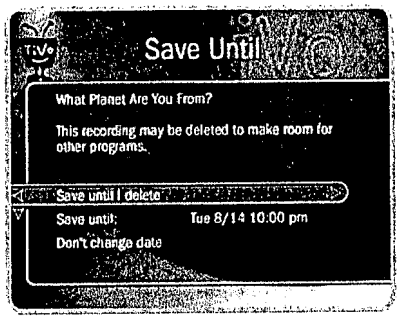
Try it. Highlight a program in Now Playing and press PLAY. OK, now for the cool part: Watch the program for at least 5 minutes, then press LEFT arrow to go back to Now Playing. Select the program again—the Program Information screen will now say "Resume Playing," instead of "Play." Select "Resume Playing," and return to the program from the point you left it!

▶ Save Until...

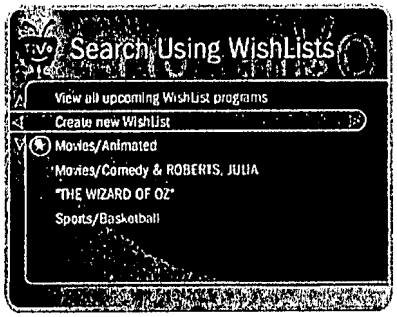
By default, programs you record are saved until space is needed (this usually means for about two days). The oldest ones may be deleted to make room for new recordings you've scheduled. However, you always have the option to save a program for as long as you want.

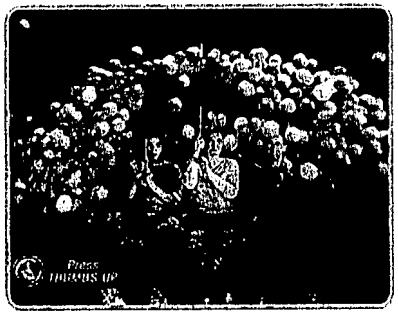
To change how long a program in Now Playing will be saved, highlight it and press SELECT or RIGHT arrow. The Program Information screen appears. Select "Save Until...." On the next screen you can choose "Until I delete" or use the arrow buttons to highlight and change the date displayed. When you are done, press SELECT.

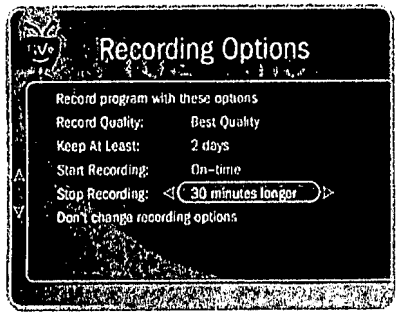
Feel free to watch some programs from Now Playing—but come back for the end of this chapter! There are still more cool things you may want to learn.



When you set up recordings, you can also specify how long you want to keep them by setting the Keep Until Recording Option. For more on this option, see page 36.







▸▸ Cool Things You Can Do

Never be late for your favorite programs: Working late? Stuck in traffic? Don't worry! If you've set up a recording or a Season Pass, the program will be waiting for you in Now Playing. You can even start watching from the beginning as the program is recorded.

Make your television wishes come true with a WishList: Have a favorite actor? A favorite hobby or interest? How about a favorite sports team? If they're on TV, chances are a WishList will find them. For details see pages 38 through 44.

Looking for good movies? Kids' shows? Science fiction? With Search by Title, you can browse all the upcoming programs in a particular category and find shows you didn't know were on. For details see page 37.

See a good preview, record the show: If you're watching live TV and a promotion comes on for an upcoming program, you may see an IPreview™ icon like this one:

Pressing THUMBS UP while the icon is visible automatically sets up a recording for the upcoming program. You don't have to remember when it's on—it will be recorded! (If you did not schedule a recording when you saw the icon, rewind until it's visible again.)

Use the Overtime Scheduler™ (and don't miss overtime!): Programs sometimes start before they're supposed to, and often end later than scheduled. By using recording options, you can "pad" your recordings to account for variations by using the Overtime Scheduler. For details see page 36.

Use the CLEAR button: The CLEAR button hides the status bar, TiVo Live Guide, channel banner, and anything else that is not part of the program. It clears the text entered using the letter grid. And if you highlight a program's title in a list, pressing CLEAR deletes the program.

CHAPTER 3

Live TV

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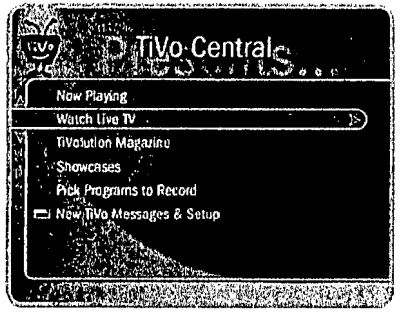
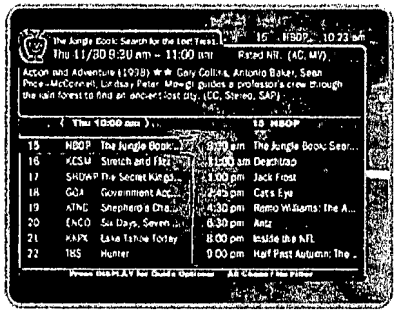
Channel Banner 28





You can use your recorder's remote to control the power, volume, mute, and TV input settings on your TV. For information on setting this up, see the *Installation Guide* that came with your recorder.

▸▸ Watching Live TV

When you're watching programming as it's broadcast, you're watching live TV. To go to live TV from the TiVo screens, press the LIVE TV button on your remote control. If you've used the pause, rewind, slow, or instant replay features and are "behind" live TV, press ADVANCE to catch up.

▶ Changing Channels

There are several ways to change channels:

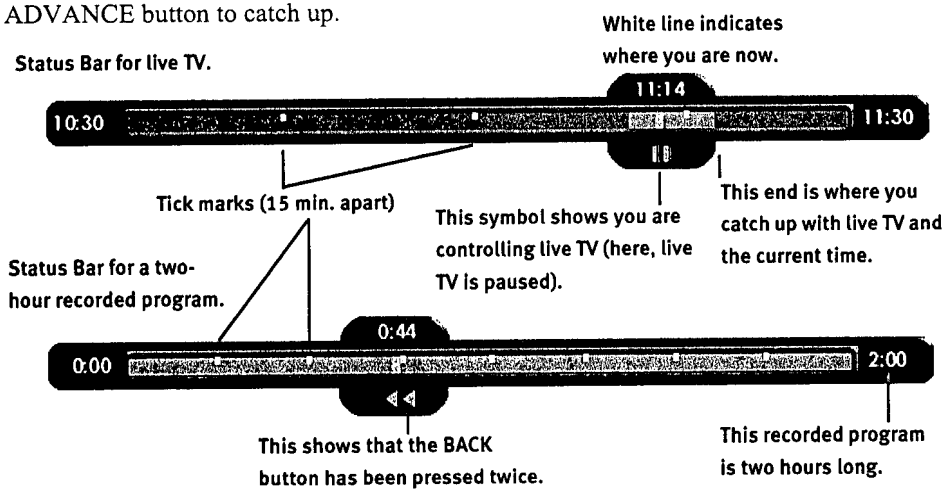
- **TiVo Live Guide.** Tired of channel surfing? Choose something to watch with the TiVo Live Guide. To see the guide, press the GUIDE button. Then use the UP and DOWN arrows to highlight a program in the list. To change the channel, press SELECT. (See page 26 for more on the TiVo Live Guide.)
- **Number pad.** To go to a specific channel, use the numbers on your remote control, then press ENTER/LAST. (If you don't press ENTER/LAST, the channel changes automatically after a few seconds.) To clear the number before the channel changes, press CLEAR.
- **ENTER/LAST.** To jump back to the previous channel, press ENTER/LAST.
- **CHAN UP/DOWN.** Of course, you can also still use the CHAN UP/DOWN button on your remote control. (CHAN UP/DOWN skips channels that are not on the channel list selected in Guide Options. For more information on channel lists, see page 27.)

▸▸ Status Bar

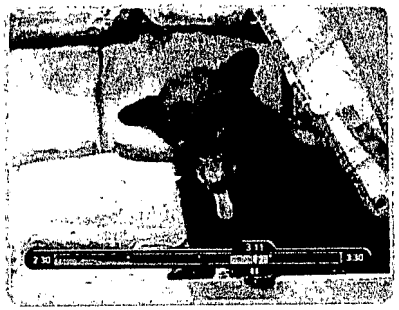
When you press PLAY, PAUSE, FWD, or BACK, the status bar appears on the lower part of your screen. In live TV, the status bar represents one hour and the white tick marks are 15 minutes apart. In recorded programs, the bar shows the program's length. The white tick marks are 15, 30, or 60 minutes apart, depending on the length of the program.

The green segment represents the part of the program saved by the recorder. The recorder automatically saves up to 30 minutes of live TV. You can move backward and forward through the saved portion of a program. (For more information, see page 24.)

In live TV, the right edge of the green segment represents the current time. A white vertical line shows where you are in the recording. If the white line is anywhere back in the green segment, you are behind live TV. If you are behind live TV, you can press the ADVANCE button to catch up.



The CLEAR button hides the status bar, the TiVo Live Guide, the channel banner, and anything else that is not part of the program.



You can only rewind live TV 30 minutes or to the point where you last changed the channel (whichever is less). When you change the channel, you skip ahead to the current time on the new channel and start saving on that channel. If you are behind live TV and watching something you still want to see, you should not change the channel.

▸▸ Controlling Live TV

Part of the fun of watching live TV with TiVo is using its pause, instant replay, and slow motion features. You can also use these features during recorded programs.

RECORD: Records a program when you're watching TV or browsing the TiVo Live Guide.

PLAY: Plays a program at normal speed. Shows the Status Bar for three seconds.

PAUSE: Pauses a live program for up to 30 minutes and a recorded program for as long as you want. To resume playing, press PAUSE again (or press PLAY).

BACK: Rewinds a program. Press BACK once, twice, or three times to go backward fast, faster, or fastest. Press it a fourth time to return to normal speed.

FWD: Fast forwards a program. Press FWD once, twice, or three times to go forward fast, faster, or fastest. Press it a fourth time to return to normal speed.

Frame Forward or Back. Press PAUSE, then press the FWD or BACK button. The image moves forward or backward one frame at a time.

INSTANT REPLAY: Instantly shows the last eight seconds of the program again.

ADVANCE: (a) In live TV, catches up to the live broadcast. (b) When you are fast forwarding in a recorded program, press ADVANCE to instantly jump ahead to the next tick mark. When you are rewinding, press ADVANCE to jump back to the previous tick mark. (c) In a recorded program, press ADVANCE once to jump to the end of the recording, press again to jump to the beginning.

SLOW: Plays the program in slow motion.

When you fast forward too far, press INSTANT REPLAY to rewind eight seconds. Press it again if you really missed the mark.

▸▸ Recording a Live Program

▸ Starting a Recording

To start recording a program while you are watching it, press the RECORD button. On the transparent screen that appears, select "Record this showing (Best Quality)." As soon as the recording starts, the program will appear in Now Playing.

If you select "Season Pass & other options," a Program Information screen appears with more actions you can take, including getting a Season Pass and changing Recording Options (see page 34 for more on Season Pass recordings and page 35 for more on Recording Options).

▸ Recording the Saved Portion

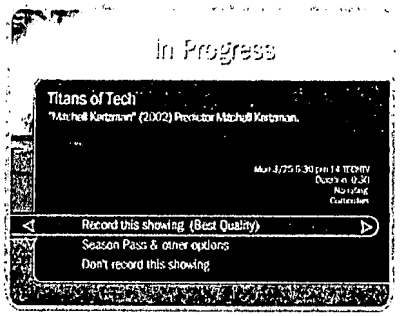
Up to 30 minutes of programming from the current channel is always being saved, even when you are not recording a program. When you change channels, the recorder clears what it has saved and starts saving programming again on the new channel. (So, if the saved portion is important to you, record it or don't change channels.)

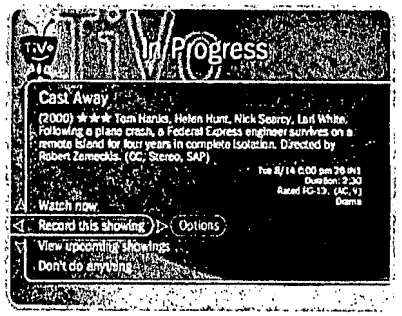
To record the saved portion—in addition to the rest of the program—you must choose "Record this showing (Best Quality)." If you choose to change the Video Recording Quality (by selecting "Season Pass & other options") the saved portion of the program won't be recorded.

▸ Stopping a Recording

Two ways to stop a recording are:

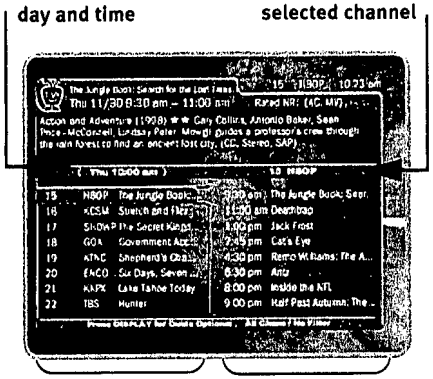
- Select the title in Now Playing, then select "Stop Recording," or
- Press the RECORD button in live TV, then choose "Stop the current recording."





You can also record any program—even one in progress—by highlighting it in the TiVo Live Guide, then pressing RECORD.

▸▸ The TiVo Live Guide



While the highlight is on the left side, you can press the FWD and BACK buttons to change the time in half-hour increments.

While the highlight is on the right side, you can press the FWD and BACK buttons to change the channel selected.

The TiVo Live Guide is the TiVo service program guide. It shows you current and upcoming programs airing up to two weeks into the future. You can also quickly set up recordings, rate any program with a Thumbs Up or Thumbs Down, and customize the channels and types of programs shown in the guide. Plus, the TiVo Live Guide is a transparent screen, so you won't miss anything while you browse.

▶ What's on Live TV?

To display the guide, go to live TV, then press the GUIDE button. To hide the guide, press GUIDE again or press CLEAR.

Left side. On its left side, the guide has a list of channels and the programs that are currently airing on them. If you want to watch a program in the list, highlight it, then press SELECT. This changes the channel.

Right side. The right side has a list of what's coming up on the highlighted channel.

▶ Moving Around the Guide

- Press the UP and DOWN arrows to highlight channels or programs.
- Press CHAN UP/DOWN to quickly move up or down one page at a time.
- Use LEFT and RIGHT arrow to move between the left and right sides.

▶ Recording a Program

To record a program, highlight it, then press RECORD. On the transparent screen that appears, select "Record this showing (Best Quality)" or "Season Pass & other options" for more choices. (See page 25 for more on recording from live TV.)

▶ Customizing the TiVo Live Guide

The TiVo Live Guide has options that let you quickly change what programs and channels the guide shows. To see Guide Options, press GUIDE to display the TiVo Live Guide, then press INFO (or DISPLAY, if you don't have an INFO button on your remote). The available options are Channels, Day, Time, Filtering (on/off), and Choose filter.

Channels. Choosing a list here selects the channels displayed by the TiVo Live Guide. Also, the CHAN UP/DOWN button skips to channels that are on the chosen list. (For details on how to customize these channel lists, see page 59.) The three channel lists are:

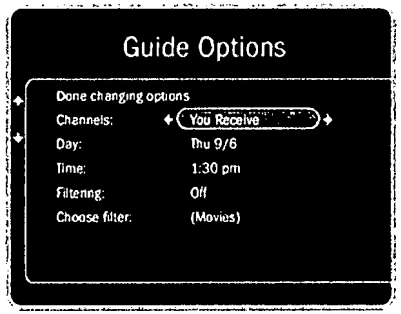
- **[Channels] You Receive.** This is the default list. It displays only the channels you have chosen in the Channels You Receive channel list.
- **Favorites.** Use this list to save time when browsing the TiVo Live Guide.
- **All.** This list displays all of your cable or satellite provider's channels, even channels you don't subscribe to.

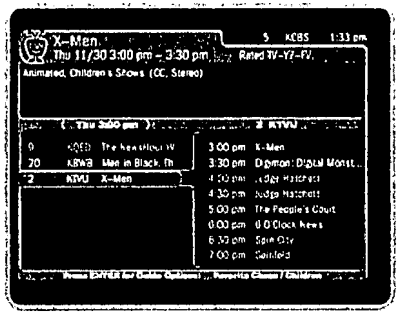
Day and Time. Sets the guide to show what's on at a particular day and time.

Filtering. Turns filtering on or off. (Choosing a filter is explained below.) When you want to see all channels and programs in the guide, turn filtering off.

Choose filter. Press SELECT on this option. In the list that appears, use the UP and DOWN arrows to highlight a category, then press SELECT. Choose a subcategory. In the TiVo Live Guide, only channels with programs in that subcategory will appear.

To change a guide option: Highlight the option, and then press LEFT or RIGHT arrow to change the selection displayed. Save your changes by pressing SELECT or GUIDE. To cancel your changes, press CLEAR.

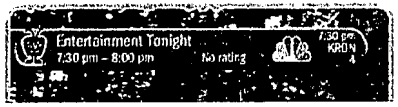




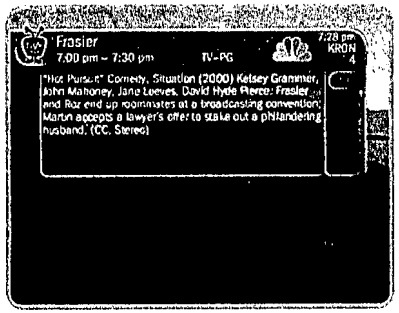
When filtering is on, the guide will only show channels that have a program in that category within six hours of the day and time selected. Programs that don't fit your category are grayed out.

Pressing RIGHT arrow switches among channel banner styles, from small...

...to medium



...to large



▶▶ Channel Banner

The channel banner appears at the top of the screen when you change channels or press the INFO button or RIGHT arrow on your remote while watching live TV. (If you don't have an INFO button, you can press DISPLAY.) This also works when you're watching a program in Now Playing. The channel banner will disappear after a few seconds. You can hide the channel banner before it disappears by pressing CLEAR or LEFT arrow.

There are three versions of the channel banner: small (with the current time and channel), medium (adds the title, running time and ratings), and large (adds a program description and icons). Press RIGHT arrow to switch among them.

Channel banner icons. The large channel banner has three selectable icons. Each icon controls a different feature. To use an icon, use the UP/DOWN arrows to highlight it, then press SELECT.

Select to record a program (or stop a current recording). If a recording is in progress, the icon appears bright.

Select to go to Parental Controls.

If Parental Controls are off, the lock appears unlocked and dim.

If they are on, it appears locked and bright (pictured here).

If they have been turned off temporarily, it appears unlocked and bright.

Select to read TiVo Messages. If the symbol is bright, you have new messages from the TiVo service.

CHAPTER 4

Playing and Recording Programs

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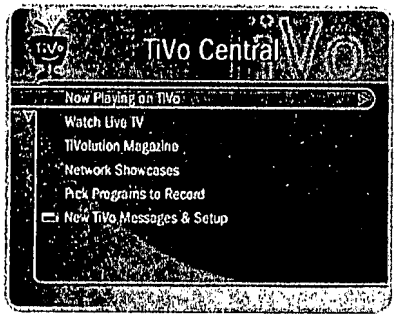


▸▸ TiVo Central

Almost everything you do with the TiVo service will start in TiVo Central; you can set up recordings, watch programs, read messages from the TiVo service, and access special showcases featuring entertaining and informative video. To get to TiVo Central, press the TiVo button on your remote control.

Occasionally, you will notice special icons beside some of the options in TiVo Central. These icons will let you know that you have received something new from the TiVo service:

When you see this icon, you know you have TiVo Messages to read.

This icon appears next to selections that contains special video content.

Chose the selection next to this icon to watch a special preview or visit a Showcase.

From TiVo Central, you can go to Now Playing to watch recorded (or recording!) programs, and you can go to Pick Programs to Record to set up your recordings.

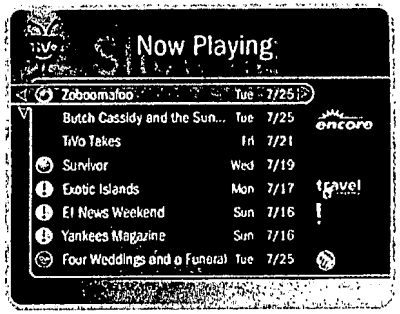
▸▸ Now Playing

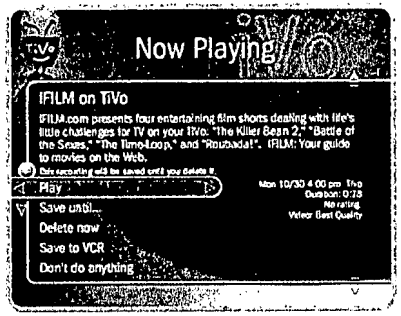
To go to Now Playing, press the TiVo button on your remote control twice. All the programs saved on your recorder are in Now Playing (no more searching through unlabeled videotapes!). As soon as a recording begins, it appears at the top of the list. You can watch any title in Now Playing, even one that is still being recorded.

To watch a program in Now Playing, highlight it and press PLAY. If you have watched part of the program already, it resumes from the point you stopped watching.

To see more actions you can take, highlight a title, then press SELECT or RIGHT arrow. A Program Information screen appears and lets you select from the actions below:

- **Play** or **Resume playing**.
- **Save until...** To change the date when the program may be deleted, highlight the date, then press RIGHT or LEFT arrow until the date you want appears. Press SELECT to return to the Program Information screen.
- **Stop recording**
- **Delete now**
- **Save to VCR.** If you have a VCR, you can save a program from Now Playing to a videotape. (See page 32 for more on using this feature.)

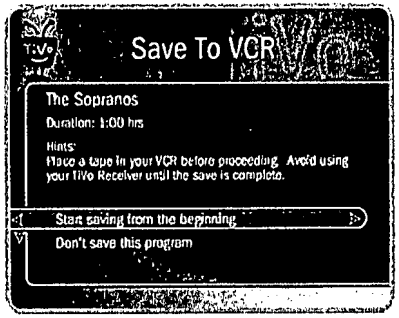




As recordings appear in Now Playing, a colored icon to the left of each title reflects how long each program will be saved and whether or not it was recorded automatically. See the back cover for a key to these icons.

4

The VCR will also record the channel banner, status bar, and any icons that may appear on the screen if you press buttons on the remote.



▶ Save to VCR

If you have a VCR, you can save a program from Now Playing to a videotape. Transfers to a VCR happen in real time. For example, if a program is two hours long, it will take two hours to save it. You will not be able to watch live TV or recordings while saving.

Most of the buttons on your remote that control live TV work as usual during Save to VCR. Keep in mind that the VCR will record the video exactly as it is played. (This means you can fast forward through the boring parts!)

If you press a button on your remote that would actually interrupt the transfer to VCR—for example, if you press GUIDE, the TiVo button, or PAUSE—a videotape icon appears as a warning.

Preparing to Save to VCR:

1. Set up your VCR. Be sure you have connected your TiVo recorder's video and audio to your VCR's video and audio. (See your *Start Here* booklet and *Installation Guide* for details on how to connect your TiVo recorder to a VCR.)
2. Be sure your VCR is set to record input from your TiVo recorder, not some other video source. (See your VCR's instructions for how to set the input.)
3. Make sure you have a videotape in the VCR.

Using Save to VCR:

1. Go to Now Playing, highlight the show you want to save, then press SELECT.
2. Using the arrow buttons, highlight "Save to VCR," then press SELECT.
3. Select "Start saving from the beginning."

4. A title screen appears for ten seconds. When you see it, press your VCR's record button.
5. When the program is over, press stop on your VCR.

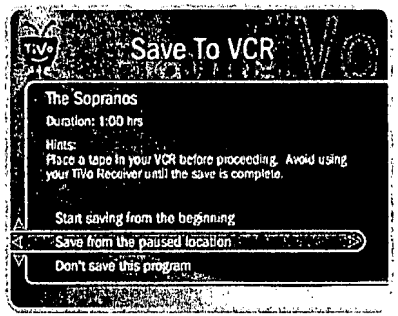
Stopping or Canceling Save to VCR:

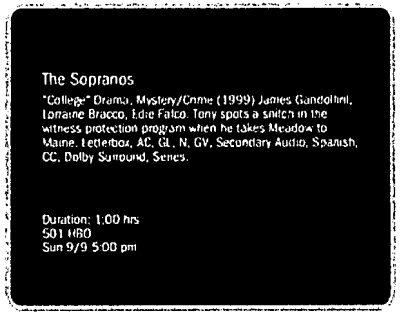
You can stop or interrupt the transfer by going to live TV or to the TiVo menus. You can also resume saving later. To stop or interrupt Save to VCR:

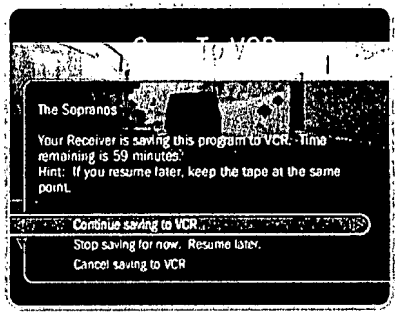
1. Press a button (for example, the TiVo button) that would interrupt Save to VCR. The videotape icon appears.
2. While the icon is visible, press the same button again.
3. A confirmation screen appears. On the confirmation screen, choose either "Stop saving for now. Resume later" or "Cancel saving to VCR."
4. Press stop on your VCR as well.

To resume saving the program (unless you chose to cancel):

1. Go to Now Playing, select the program, and choose "Save to VCR" on the Program Information screen.
2. Choose "Save from the paused location." A countdown screen appears.
3. To ensure that your VCR has time to begin recording, press record on your VCR before the countdown gets to "1."







▸▸ Season Pass

A Season Pass records every episode of a series that airs on a certain channel—even if the date or time slot changes! It is completely automatic and very easy to set up. Just select a program (from the TiVo Live Guide, Search by Title, View upcoming, etc.) and choose "Get a Season Pass." There are two other types of recordings that repeat automatically:

- **Manual Repeating Recording:** Records on a specific channel at a specific time, just as you would with a VCR. See page 48 for more information.
- **Auto-recording WishList search:** Records all programs a WishList finds. See page 43.

These three types of repeating recordings also have the following in common:

- **No duplicates within 28 days.** If you watch or delete a particular episode or showing, it will not be recorded automatically again for 28 days. This prevents Now Playing from filling up with shows you probably don't want. If you want to record duplicates, go to Recording Options, Show Type, and select "All (with duplicates)." You can also schedule a single duplicate recording for a particular program.
- **Parental Controls.** If Parental Controls are on when you schedule a repeating recording, the recorder checks its current program information to see if any upcoming program violates a Parental Control. If a program does, the recorder requires the current password to continue. See page 53 for more information.
- **Keep at Most=5.** By default, five episodes of a repeating recording program are kept in Now Playing. (You can change this setting; for more information, see page 35.)
- **Resolving conflicts.** The TiVo service resolves scheduling conflicts between repeating recordings by comparing recording priorities. You can change recording priorities with the Season Pass Manager. (See page 49 for more details).

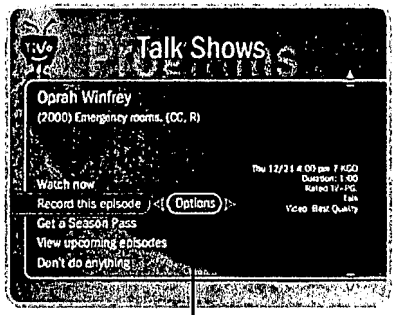
An exception to the 28-day rule may occur if the program wasn't watched but was automatically deleted from Now Playing to make room for another recording you requested—or if the program information describes it incorrectly.

Recording Options

When you set up a recording, you can set Recording Options. You can also change them later by selecting the program in the To Do List or the Season Pass Manager, then choosing "Options."

Setting Recording Options

The Program Information screen that appears when you select a program includes choices to "Record this episode" and "Get a Season Pass." When one of these recording actions is highlighted, "Options" appears to its right. To see the current Recording Options, use the arrow buttons to highlight "Options," then press SELECT.

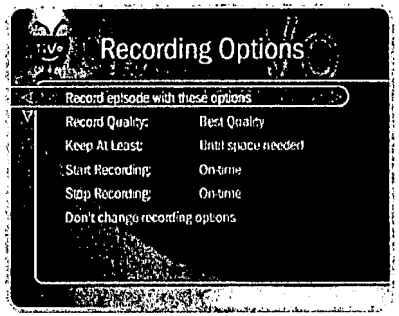


Recording Options

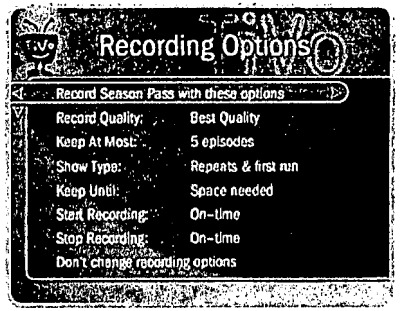
To set your Recording Options:

1. On the Recording Options screen, use the UP/DOWN arrows to highlight an option.
2. Use RIGHT and LEFT arrow to change the setting.
3. When you are done, press SELECT or highlight "Record with these options."
4. Press SELECT again to schedule the recording with the new options.

To cancel your changes, press LEFT arrow, or highlight "Don't change recording options" and press SELECT.



Recording Options: one-time recording



Recording Options: repeating recording

Recording Options include:

Record Quality. The choices for Video Recording Quality are Basic, Medium, High, and Best. The default setting is Best, (Best looks great, but keep in mind that it takes up more space). These settings are described on page 60. (This option is not available once a recording starts.)

Keep At Most. This option sets the maximum number of episodes to be saved—useful for keeping only the most recent nightly news or only a few of your kids' daily programs. The default setting is 5. (This option is available only for a repeating recording.)

Show Type. The choices are "Repeats & first run," "First run only," which records only new episodes, and "All (with duplicates)."

Keep Until. You can change this setting from "Space needed" (the default setting) to "Until I delete." (This option is available only for a repeating recording.)

Keep At Least. You can set the minimum amount of time the recorder keeps a recording. The default setting is "Until Space Needed."

The Overtime Scheduler consists of these two options:

Start Recording. You can choose to start recording up to ten minutes before a program begins. The default setting is "On-time." (This option is not available once recording starts.)

Stop Recording. You can set a recording to continue—for a few minutes or up to three hours—after it's scheduled to end. For example, you can extend a recording of a sports event and be sure to catch the whole game—even if it goes into overtime. The default setting is "On-time."

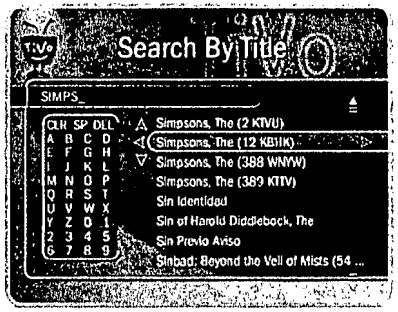
Are two of your favorite programs on at the same time? If you use Recording Options, you can create two Season Pass recordings for the same time. Set the first one to record only First Run episodes; set the second to record every episode. Use the Season Pass Manager (described on page 49) to give the first one higher priority than the second. Voilà! As long as the program information is correct, when reruns of the first program air, your recorder will ignore them and record episodes of the second program.

▸▸ Search by Title

Search by Title, located in Pick Programs to Record, finds programs, even if you just know the first part of the title.

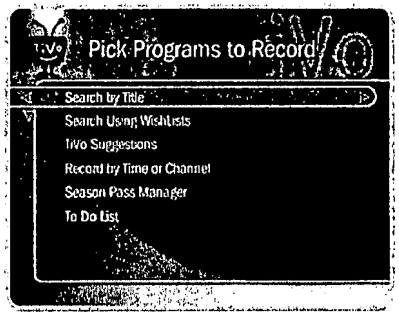
To find a specific program:

1. If you wish, you can first narrow the search with a category and subcategory.
2. The next screen has a grid with numbers and letters. Spell out the title by using the arrow buttons to move, then pressing SELECT on each letter you want. (Skip "a," "an," or "the.") As you select letters, an alphabetical list of programs appears on the right. Keep selecting letters until you see your program.

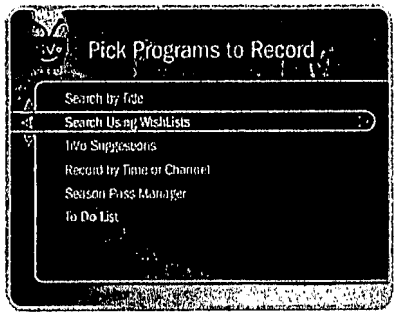
   You can use your remote control for some functions too. The CLEAR button on the remote erases everything; BACK erases one letter at a time; FWD inserts a space.
3. When you see your program, press RIGHT arrow until the highlight is in the list. To move the highlight within the list, press the UP and DOWN arrows. You can also press CHAN UP/DOWN to move quickly up or down the list one screen at a time.
4. Press SELECT when the title you want is highlighted. The Program Information screen will appear. Then you can view upcoming episodes, set up a Season Pass, or record an individual showing.

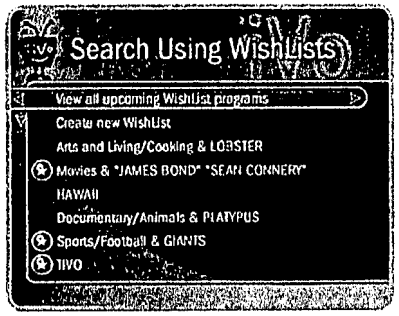
To browse a category of upcoming programs: Choose a category and subcategory. Numbers come before letters, so to start from the top, enter a zero.

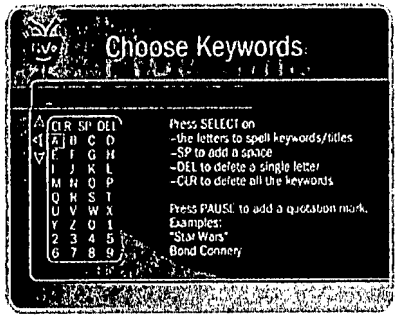


If you only know one word in the title, use a Title Wishlist to find the program. See page 41 for more information.

Replace hyphens (-), slashes (/) and periods (.) with spaces. For example, use 20 20 to search for the title "20/20." Any other marks, such as apostrophes ('), asterisks (*), ampersands (&) and dollar signs ($) are ignored. For example, you would use 6 OCLOCK NEWS to search for the title "6 O'Clock News."







▸▸ WishList

A WishList is a powerful search feature that finds upcoming programs. It keeps on searching automatically for as long as you keep the WishList.

For example, you could create a Category Only WishList for the category "Movies" and subcategory "Action/Adventure." You could then use it occasionally to look at a list of all action/adventure movies airing in the next two weeks. The list would be constantly updated by your recorder's daily calls for more program information.

You could search for something more specific by creating an Actor WishList for Sean Connery, and then include the category "Movies," and subcategory "Action." This WishList would only find action movies starring Sean Connery.

With a Keyword WishList, you can look for something very specific. For example, the Keyword WishList *GIANTS* with category "Football" would find Giants football (but not baseball) games for you.

Here's another example: You could make a Keyword WishList to find the 1986 remake of the science fiction classic *The Fly*, starring Geena Davis. Not only does this WishList find a specific program—it finds the specific version! The keyword entry would look like this: *"GEENA DAVIS" FLY.* (Using quotation marks in a Keyword WishList makes sure that the WishList only finds programs that match the exact phrase you have entered. This means that you will find *The Fly*, starring Geena Davis and not a documentary about flies narrated by Davis Geena!) You could also find this movie by making a Keyword WishList for the movie's title and year. In that case, the keyword entry might look like this: *"THE FLY" 1986.*

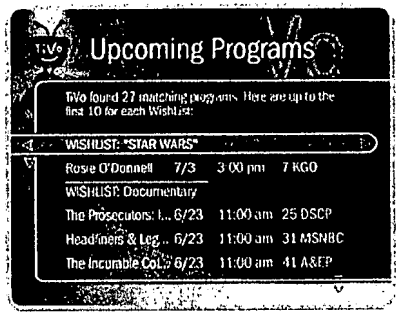
After you make a WishList, you can periodically view what it finds by selecting "View all upcoming WishList programs," or selecting an individual WishList, then selecting "View upcoming programs." Then you can schedule recordings for the programs or episodes you want. (See page 43 for more details.)

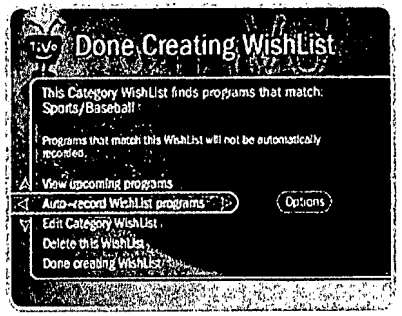
▶ Can a WishList Do More Than Search?

You can set a WishList to auto-record, and it will record every program the WishList finds. For example, with the Sean Connery Actor WishList, you would automatically collect Sean Connery action movies in Now Playing.

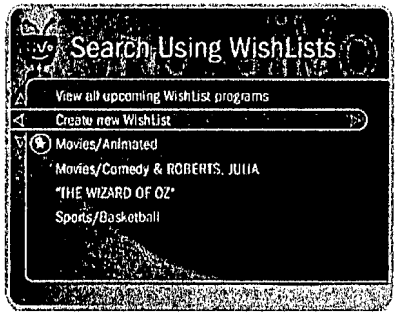
Some WishList searches are better suited to browsing than to auto-recording. For example, you could create a Category Only WishList for the category "Documentary." This WishList would find every upcoming documentary. You could then occasionally browse the WishList and choose the upcoming documentaries you want to record.

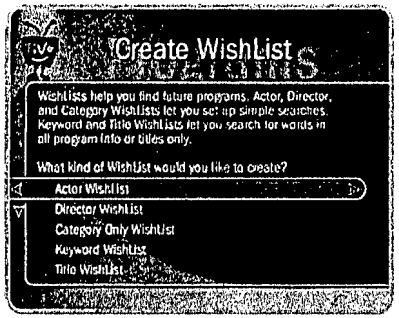
The more specific a WishList is, the better suited it is to auto-recording. For example, an auto-recording Keyword WishList with the keywords *LAKERS* and *KINGS,* and category "Sports/Basketball" would only record basketball games with both of these teams—a great way to ensure that you enjoy this season's rivalry. (For more on auto-recording WishList, see page 43.)

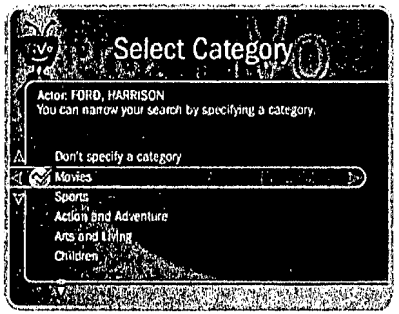




If you set up an auto-recording WishList for sports, consider using the Overtime Scheduler (described on page 35) to make sure you don't miss the most exciting part of the game!







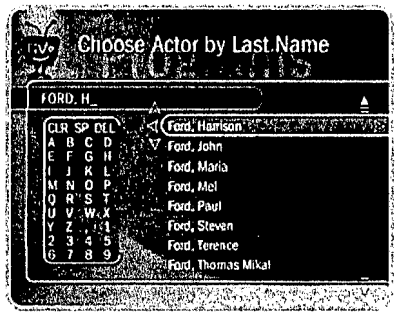
▶ Creating a WishList

From Search Using WishLists, select "Create new WishList." Next, select the type of WishList: Actor, Director, Category Only, Keyword, or Title. For most WishList searches, you use the grid of letters on the next screen to spell out what you're looking for.

As the last step, you'll then be able to select a category and subcategory to narrow your search. For example, if you want movies with Harrison Ford, but not documentaries or talk shows, select "Movies." To search every category, select "Don't specify a category."

Category Only WishList: Use the UP and DOWN buttons to highlight a category, then press SELECT or RIGHT arrow. A subcategories list appears. Highlight a subcategory, then press SELECT or RIGHT arrow. To search all subcategories, you can also select "Don't specify a subcategory."

Actor or Director WishList: Spell the person's last name first by using the arrow keys to move the selection box around the grid and pressing SELECT to enter a highlighted letter. As you select letters, a list of names appears to the right of the keypad.



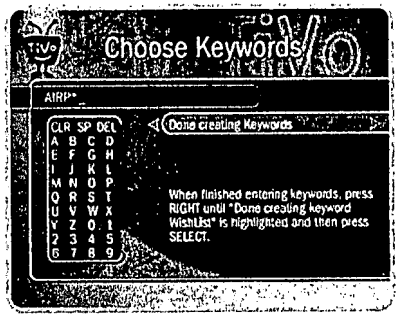
If you see the person's name, press RIGHT arrow until you move the highlight to a name in the list.. Use the UP or DOWN arrow to highlight the name you want and press SELECT.

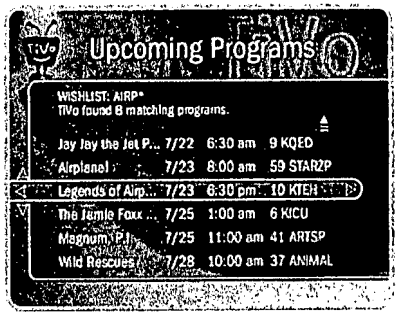
To search for a name that is not on the list, enter the name in the format: *LAST NAME, FIRST NAME*. You must match the spelling of the name exactly, and you must use a comma (available in the grid under the letter *W*).

A Keyword or Title WishList

You can create a Keyword or Title WishList with one keyword or with several. For a Keyword WishList, the TiVo service checks for your keywords in the program or episode title, description, actor, director, year, and category information. A Title WishList works very similarly, but the TiVo service only searches program and episode titles.

Spell your keyword(s) by using the arrow buttons to move around, then pressing select to enter highlighted letters on the grid. You can enter as many characters as will fit on the screen. When you have finished, use RIGHT arrow to highlight "Done creating keywords," then press SELECT or RIGHT arrow.





Using * in WishList Searches

To search for similar words in a Keyword or Title WishList, use the asterisk (*) as a special symbol that replaces the endings of words. For example, the keyword *AIRP** would find shows containing "airport," "airplane," "airplanes," as well as the movie "Airplane!" To enter an asterisk, press the SLOW (⏯) button as you are spelling out your keyword or title.

The asterisk can be helpful when you're looking for a range of similar words, as in the example above, or if you're just not sure how something is spelled. Pop quiz: is it "irresistable" or "irresistible?" Use the keyword *IRRESIST** and don't worry about it! Two things to note about using the asterisk:

- It can only be used at the end of a keyword; it cannot be used to omit letters at the beginning or in the middle of a word. (For example, *AIR*NE* or **PLANE* would not work.)

- When using this symbol, be as specific as possible. For example, do not use keywords like *TH**. There will not be enough room to show all the results of a keyword that is too general.

Tips for entering keywords

- To specify an exact phrase in a Keyword or Title WishList, surround a set of words with quotation marks (to enter quotation marks, press PAUSE (⏸). For example, the keyword *PAUL SIMON* might also turn up a documentary about Simon Bolivar with a director whose name is Paul. Use *"PAUL SIMON"* to be certain you find programs that only feature Paul Simon.
- If you enter more than one keyword in a Keyword or Title WishList, they only find programs that match all of your keywords (for example, *"GEENA DAVIS" FLY).*
- If you want to include an exact phrase and additional keywords, there should be a space between the final quotation mark and the beginning of the next word. You can place a space character by selecting SP on the grid of letters.
- Replace hyphens (-), slashes (/) and periods (.) with spaces. For example, you would use the keyword phrase *20 20* to search for the title "20/20." For an Actor WishList for Catherine Zeta-Jones, use *ZETA JONES, CATHERINE.* You can place a space character by selecting SP on the grid of letters or by pressing FWD (▶▶).
- Any other marks, such as apostrophes (') and ampersands (&), are ignored. For example, you would use the keyword phrase *6 OCLOCK NEWS* to search for the title "6 O'Clock News." (Note that commas (,) are also ignored, except in an actor or director WishList, where they are essential.)
- For dollar signs ($) substitute the letter S. For example, to find "$100,000 Pyramid," use *S100000.* (In Search by Title, skip the dollar signs to find these titles.)

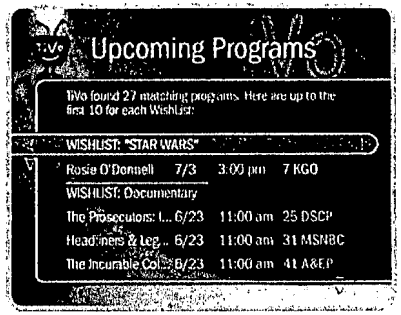
Browsing, Recording, and Editing a WishList

To browse all WishList searches: Select "View all upcoming WishList programs." This selection displays a list of up to 10 upcoming programs from each of your WishList searches—and up to 200 programs total. The list is divided to display programs found by each WishList. To record a program, select its title; you will see the Program Information screen, where you can select "Record this episode" and other actions.

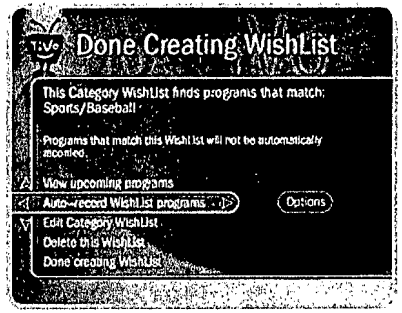
To browse an individual WishList: Highlight the WishList and press SELECT. Select "View upcoming programs," which searches through current program information and creates a list of up to 200 unique upcoming programs that match this WishList. This list displays the first airing of an episode or program.

To see all the showings of upcoming episodes (up to two weeks into the future), select the title of the program in the "Upcoming programs" list generated by your WishList. Then select "View upcoming episodes" on the Program Information screen that appears. A comprehensive list appears, including several episodes with showings on different channels and different time slots. The Program Information screen also includes an option for recording a particular program.

Auto-recording WishList. When you create a WishList or select it, you can choose the action, "Auto-record WishList programs." This means every program the WishList finds will be automatically recorded. (See page 34 for more on repeating recordings.)



As you browse the upcoming program titles found by WishList searches, remember that the CHAN UP/ DOWN button pages quickly through lists.



Each auto-recording WishList and its upcoming recordings are marked with a star ( ). If you want to be sure that all the matches your auto-recording WishList finds are recorded, give the auto-recording WishList a high priority in the Season Pass Manager. (See page 49 for details.)

To edit a WishList. Select the WishList, then select Edit WishList. You can change your WishList—for example, to correct a misspelling or to add a category if you did not add one when you created the WishList.

▸▸ TiVo Suggestions

The TiVo service tries to make sure there is always something interesting on for you to watch. When you aren't using it, your recorder is sifting through upcoming programs to find things you might like. How does it know what you will like? It makes predictions based on ratings you have given to programs using the THUMBS UP and THUMBS DOWN buttons, and on Thumbs Up given automatically to programs you chose to record.

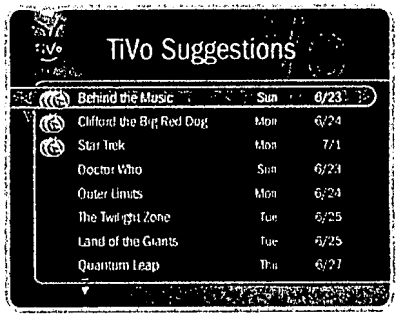
The more you record and use the THUMBS UP and THUMBS DOWN buttons, the better the suggestions become. You can rate shows while browsing TiVo Suggestions or while:

- Watching live TV or browsing through the TiVo Live Guide.
- Viewing a Program Information screen (for example, to schedule a recording).
- Looking through Showcases and TiVolution Magazine.

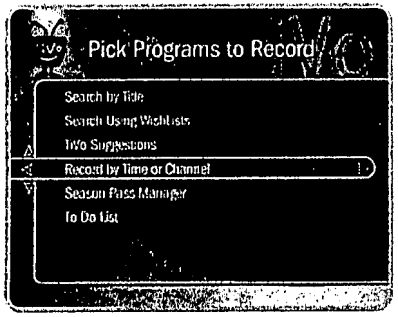
You can check TiVo Suggestions occasionally to see what TiVo has found for you. The list of programs is ranked, so shows you are more likely to enjoy are near the top. If you want to record a program, select it and the Program Information screen appears.

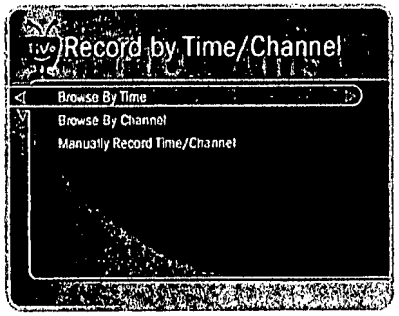
When there is empty space in Now Playing, the TiVo service may record a TiVo Suggestions for you. Suggestions are marked with a TiVo icon ( ). The recorder never deletes your programs in Now Playing in order to make room for a suggestion. Instead, suggestions are deleted to make room for recordings you schedule.

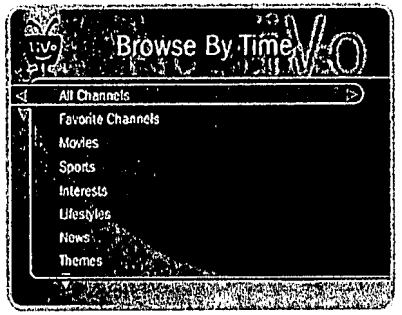
Your personal TV preferences are just that: personal. All that information is stored in the recorder, in your living room. See the TiVo Privacy Policy at *www.tivo.com/privacy* or in Chapter 7 for more information. If you would like to turn off automatic recording of suggestions, you have that option. (See page 61 for details.)



If other members of your household are pressing THUMBS UP on shows you don't care for, and vice versa, you may find that TiVo Suggestions is making some suggestions that you like, and some that are more appropriate for other members of your household.







▶▶ Record by Time or Channel

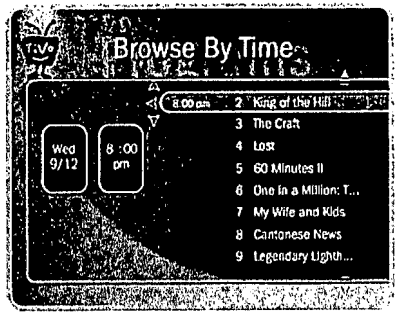
Three options are available under Record by Time/Channel: Browse by Time, Browse by Channel, and Manually Record Time/Channel.

▶ Browse by Time

Browse by Time lets you browse all programs on a particular day and time. With Browse by Time, you can filter the list to see only programs in a particular category. For example, you can browse all the movies airing on Saturday night.

To browse by time:

1. Use the arrow buttons to highlight a category (for example, "Movies") to narrow the list of programs, then press SELECT.
2. Press the UP and DOWN arrows to select the date you want to see, then press RIGHT arrow to move the highlight to the time column.
3. Press the UP and DOWN arrows to select a time.



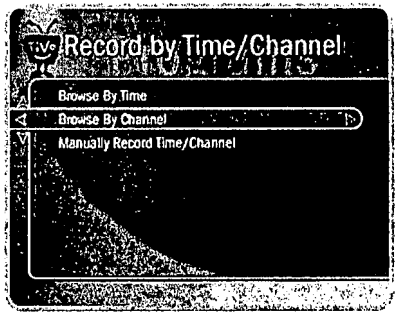
4. Press SELECT to bring up the list of programs without leaving the time selector, or press RIGHT arrow to bring up the list of programs and move to the list at the same time.
5. When you find a program you want to record, highlight it and press SELECT to bring up the Program Information screen. Then you can view upcoming episodes, set up a Season Pass, or record an individual showing.

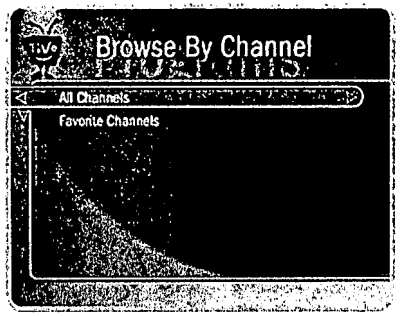
Browse by Channel

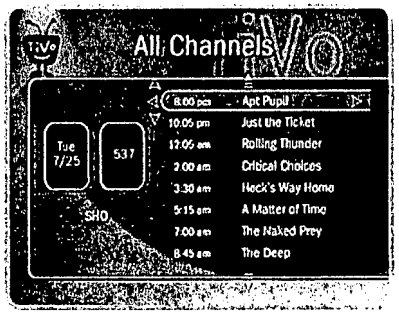
Browse by Channel lets you browse through programs on a particular channel. You can start with all channels or just your favorites.

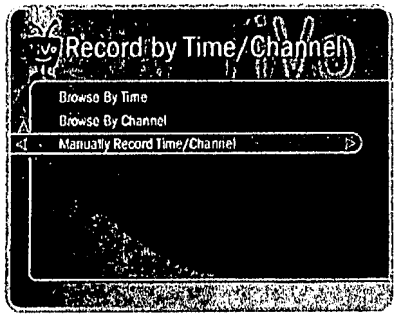
To browse by channel:

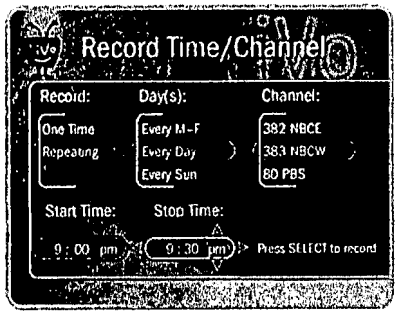
1. Highlight and select either "All Channels," which includes all the channels you receive, or "Favorite Channels," which includes just the channels you have selected as your favorites. (For information on customizing the list of Favorite Channels, see page 59.)
2. Press the UP and DOWN arrows to select the date you want to browse, then press RIGHT arrow to move the highlight to the channel column.
3. Press the UP and DOWN arrows to select a channel. (You can also use the numbers on the remote to type in a channel, then press ENTER/JUMP.)
4. Press SELECT to bring up the list of programs without leaving the channel selector, or press RIGHT arrow to bring up the list of programs and move to the list at the same time.
5. When you find a program you want to record, highlight it and press SELECT to bring up the Program Information screen. Then you can view upcoming episodes, set up a Season Pass, or record an individual showing.











Here's a tip: Use a Manual Repeating Recording to record things like the opening monologue of a late night talk show.

Manually Record Time/Channel

Manually Record Time/Channel lets you schedule a recording on a specific channel at a specific time (just as you would with a VCR). You can also create a manual repeating recording here by setting the recording to repeat every week, every day, or every weekday.

To create a manual recording:

1. Choose the recording type, using the UP and DOWN arrows to select "One Time," or "Repeating." Then press RIGHT arrow.
2. Choose the day(s) for the recording, using the UP and DOWN arrows to change the current selection. If you chose "Repeating," you can choose to repeat the recording on a specified day of the week (for example., "Every Tuesday") or several times a week (for example, "Every M - F"or "Every Day"). Then press RIGHT arrow.
3. Choose a channel using the UP and DOWN arrows (or by entering a number with the remote, then pressing ENTER). Press RIGHT arrow.
4. Set the hour, minute, and am/pm for the start and stop time, using the UP/DOWN arrows to change the current selection. Press RIGHT arrow to move to the next step, LEFT arrow to move back.
5. Schedule the recording by pressing SELECT. A confirmation screen appears. (The recording will be named with a "best guess" based on program guide listings for that time and channel. This will help you find your program later in the To Do List or in Now Playing.) When you're ready to schedule the recording, just press SELECT.

▸▸ Season Pass Manager

Say you have a Season Pass to *ER* and an auto-recording WishList for movies with Julia Roberts. What if a Julia Roberts movie happens to air at the same time as *ER*? The recorder will check the priorities in the Season Pass Manager to decide which program to record. If the Julia Roberts WishList has a higher priority than the *ER* Season Pass, the Julia Roberts movie will be recorded, and *ER* will not.

If you don't change priorities in the Season Pass Manager, repeating recordings are prioritized by the order they were set up: the first has highest priority, and so on.

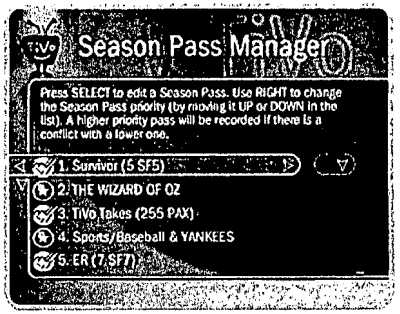
To change the priority order:

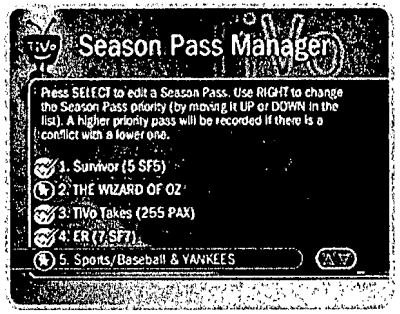
1. Use the UP/DOWN arrows to highlight one of your repeating recordings.
2. Press RIGHT arrow to highlight the arrows to the right of the title.
3. Use the UP/DOWN arrows to move the selected title up or down in the list.

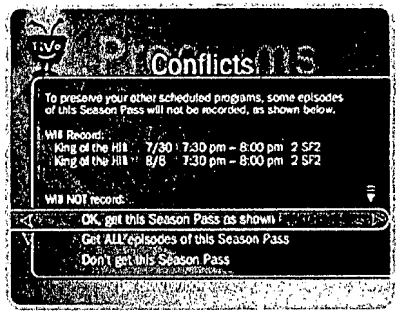
▸ Priorities and Resolving Conflicts

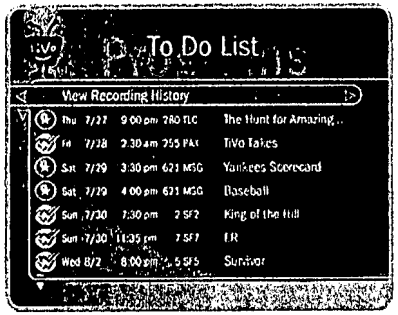
If a conflict occurs when you're setting up a new repeating recording, you'll be shown which programs are involved. You'll also be given options to resolve the conflict:

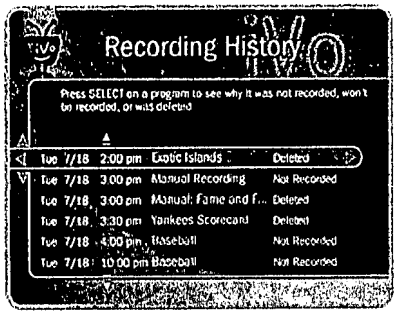
- Record only those programs that do not conflict with others previously scheduled to record. This gives the repeating recording the lowest priority.
- Record all programs requested. This gives the repeating recording the highest priority.

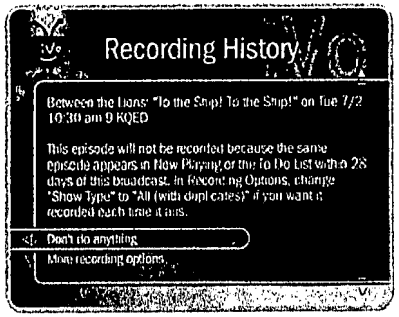












▸▸ To Do List

The To Do List shows all your scheduled recordings and lets you cancel or edit them. Individual recordings are marked with a single check mark (✓). Season Pass recordings and manual repeating recordings have a double check mark (✓✓), and WishList recordings have a star (★).

To cancel a program or a repeating recording: Highlight the title and press CLEAR.

▸ View Recording History

This is an advanced feature in the To Do List for those who really want all the details. Selecting this option takes you to a list of three types of programs:

Deleted: To find programs that were deleted, press the UP arrow or CHAN UP. (You will find these programs listed above the point where the highlight bar starts off.) Selecting a title will take you to a screen that tells you how and when the program was deleted.

Were not recorded: To find programs that were not recorded, press the UP arrow or CHAN UP. (You will find these programs listed above the point where the highlight bar starts off.) Selecting a title will take you to a screen that tells why it was not recorded.

Will not be recorded: To find programs that will not be recorded, press DOWN arrow or CHAN DOWN. (You will find these programs listed below the point where the highlight bar starts off.) Selecting a title will take you to a screen that tells you why the program will not be recorded. You can then select "More recording options" on this screen, which will display the Program Information screen. You could choose "View upcoming episodes" to find an episode that doesn't conflict with anything else, or change Recording Options, which may allow the program to be recorded.

CHAPTER 5

Messages & Setup

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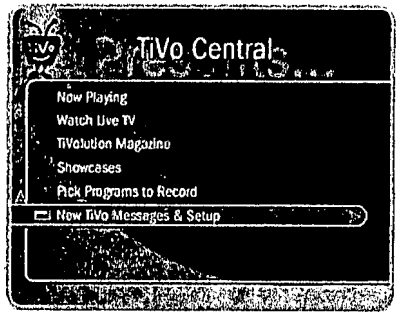
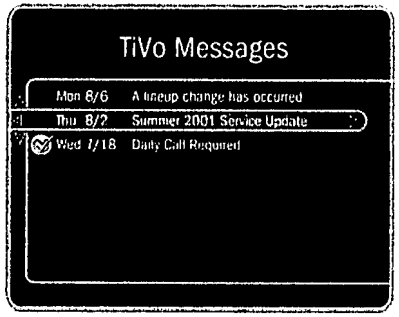




▸▸ TiVo Messages

Select TiVo Messages to read any messages from the TiVo service or internal alerts from your recorder. When you receive a new message, TiVo Central will show the option, "NEW TiVo Messages & Setup."

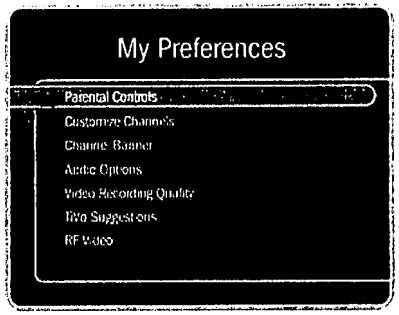
To read the messages:

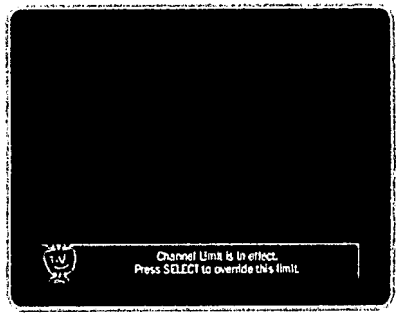
1. Go to TiVo Central, then select NEW TiVo Messages & Setup.
2. Select Read NEW TiVo Messages. A list of all of your messages appears. Messages you have already read are check marked.
3. Use the UP/DOWN arrows to highlight a message, then press SELECT to read it.

   CHAN UP/DOWN lets you page through a message if it doesn't fit on the screen.

▸▸ My Preferences

With the selections in My Preferences, you can make the recorder work more to your liking: you can set Parental Controls and your default Record Quality, customize channel lists, turn on Save Disk Space, and set a number of other options.





▸ Parental Controls

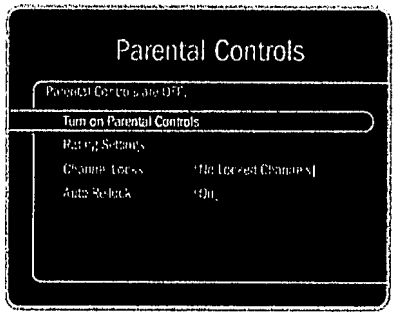
Parental Controls allow you to set limits on movie and television ratings and to lock specific channels so that a password is required to view them. If you try to watch a program in Now Playing that violates a Parental Control, you will also be asked for the password. In addition, when Parental Controls are on, you must enter a password to delete a program that violates a Parental Control.

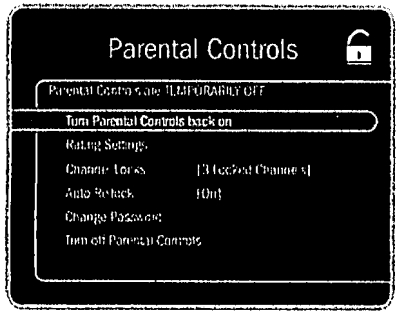
The padlock icon shows the current state of Parental Controls:

- **Off.** No password or controls set. Padlock appears unlocked and dark.
- **On.** Password and controls set. Padlock appears locked and bright.
- **Temporarily off.** Controls set but password was entered to temporarily turn off. Padlock appears unlocked and bright.

While Parental Controls are on, you can watch a locked program or channel by pressing SELECT, then entering the Parental Controls password. This temporarily turns off Parental Controls.

(The large version of the channel banner has a shortcut to Parental Controls; see page 28 for details.)





To turn on Parental Controls and define a password

1. Select "Turn on Parental Controls."
2. Use the number buttons on the remote control to enter a four-digit password.
3. Enter the same password again for confirmation.

To temporarily turn off Parental Controls

- Enter the password to watch a program or channel—Parental Controls are temporarily turned off, or
- Select "Temporarily turn off Parental Controls" on the Parental Controls screen, then enter your password.

When Parental Controls are temporarily turned off, any program or channel can be viewed, but the correct password is still required to change Parental Controls settings.

To re-enable Parental Controls

- On the Parental Controls screen, select "Re-enable Parental Controls," or
- Put the recorder in Standby, then take it out of Standby. To do this, press the POWER or STANDBY button on the front of your recorder; or select Messages & Setup, then Standby, and then press the TiVo or LIVE TV buttons.

Auto Re-lock Option

When Parental Controls are temporarily turned off, they re-lock automatically after four hours if you don't use your remote. Parental Controls won't re-lock in the middle of a show. By default, the Auto Re-lock option is on.

To turn off Auto Re-lock:

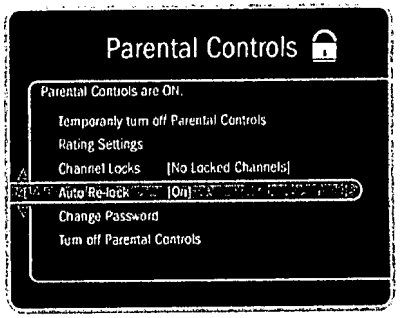
- To turn off Auto Re-lock, go to Messages & Setup, then My Preferences, then Parental Controls. Press the DOWN arrow to highlight "Auto Re-lock," then press SELECT. Enter your password, then highlight and select "Auto Re-lock off."

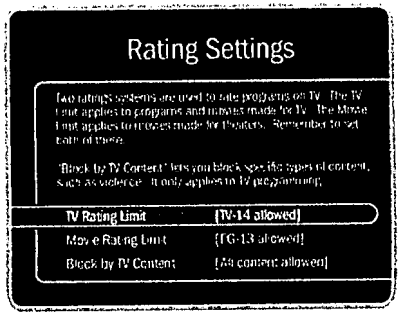
Rating Settings for TV and Movies ( )

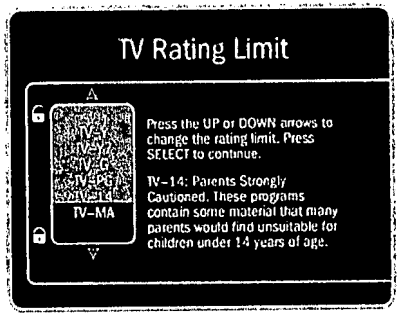
Movies that are originally meant for release to theaters have a different rating system from programs that are made for TV. You can use Parental Controls to set limits for both rating systems (see page 57). There is also a rating system for TV content that allows you to set limits for specific types of content that may be objectionable—such as sexual content or violence.

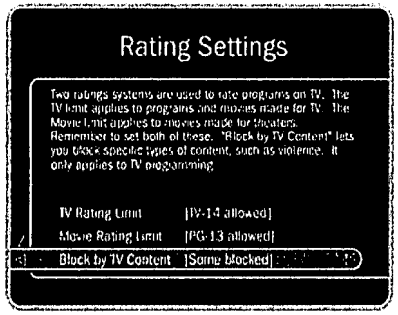
To set Rating Limits for TV and Movies:

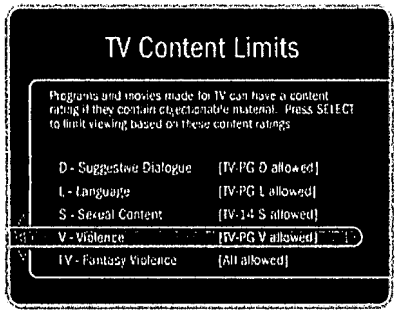
1. From Parental Controls, select "Rating Settings," then enter the password and press SELECT.
2. Select the kind of limit you want to change: TV or Movies.
3. The next screen contains a box listing all potential ratings. Ratings shaded in green are not locked; those in red are locked. Use the UP and DOWN arrows to move the red shading and adjust which ratings are locked. Your changes are saved automatically. When you are done, press RIGHT or LEFT arrow to return to Parental Controls.







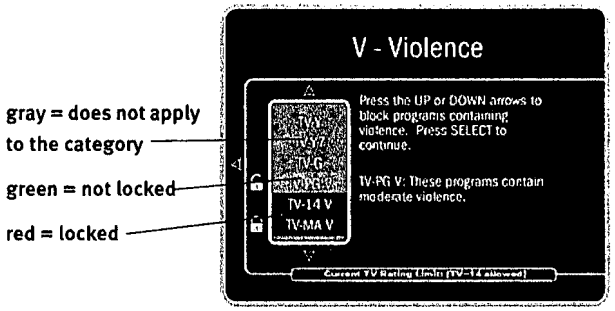




To set Rating Limits for Specific TV Content:

1. From Parental Controls, select "Rating Settings," then enter the password and press SELECT.
2. Select Block by TV Content.
3. A list of categories appears on the next screen. Select a category (for example, V-Violence).
4. A box containing all the possible ratings appears. Ratings in green are not locked; ratings in red are locked. (Ratings in gray do not apply to the category. For example, a TV-Y program would not have *V-Violence* content so there is nothing to block.)

   Use the UP and DOWN arrows to adjust which ratings are locked or unlocked. The display to the right of the box will change to tell you exactly what ratings level you are allowing. Your changes are saved automatically. To return to the Parental Controls screen, press SELECT or RIGHT arrow.



Motion Picture Association of America ratings for movies

G: General Audiences. Most parents would find this material suitable for all ages.

PG: Parental Guidance Suggested. Parents may find portions of this material unsuitable for younger children.

PG-13: Parents Strongly Cautioned. This material contains portions many parents would find unsuitable for children under 13 years of age.

R: Restricted. This material is specifically designed to be viewed by adults and therefore may be unsuitable for children under 17.

NC-17: Adult Content. This material contains intense, disturbing, or graphically portrayed themes or content that are not suitable for viewing by children under 17.

AO: Explicit Sexual Content. This material contains explicit sexual content and is intended to be viewed by adults ONLY.

▶ Ratings for television movies and programs (including content ratings):

TV-Y. All children. This program is designed to be appropriate for all children. Whether animated or live action, the themes and elements in this program are specifically designed for a very young audience, including children from ages 2-6. This program is not expected to frighten younger children.

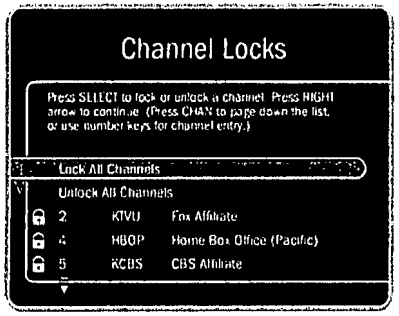
TV-Y7. Directed to older children. This program is designed for children age 7 and above. Themes and elements in this program may include mild fantasy or comedic violence, or may frighten children under the age of 7. Programs where fantasy violence that may be more intense or more combative than other programs in the TV-Y7 category are designated TV-Y7-FV.

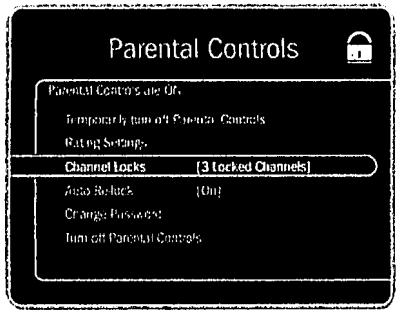
TV-G. General audience. Most parents would find this program appropriate for all ages. Although this rating does not signify a program designed specifically for children, most parents may let younger children watch this program unattended. It contains little or no violence, sexual dialogue, or situations; and no strong language.

TV-PG. Parental guidance suggested. This program contains material that parents may find unsuitable for younger children. Many parents may want to watch it with their younger children. The theme itself may call for parental guidance and/or the program contains one or more of the following: moderate violence (V), some sexual situations (S), infrequent coarse language (L), or some suggestive dialogue (D).

TV-14. Parents strongly cautioned. This program contains some material that parents would find unsuitable for children under 14 years of age. Parents are strongly urged to exercise greater care in monitoring this program and are cautioned against letting children under the age of 14 watch unattended. This program contains one or more of the following: intense violence (V), intense sexual situations (S), strong coarse language (L), or intensely suggestive dialogue (D).

TV-MA. Mature audiences only. This program is specifically designed to be viewed by adults and therefore may be unsuitable for children under 17. This program contains one or more of the following: graphic violence (V), explicit sexual activity (S), or crude, indecent language (L).





When you turn Parental Controls off, you don't need to know a password to turn them back on. You may prefer to temporarily turn off Parental Controls, so that another person in your household does not choose a new password.

Channel Lock for Live TV ( )

You can lock individual channels so that a password is required to view any program on those channels. To lock or unlock channels:

1. From the Parental Controls screen, select "Channel Lock," and then enter the password.
2. A channel list appears with a padlock icon to the left of any locked channels. Highlight a channel and press SELECT to add or remove a padlock icon. Use CHAN UP/DOWN to move through the list quickly. You can highlight a specific channel by entering its channel number with the number buttons on the remote.
3. When you are done, press RIGHT or LEFT to return to Parental Controls. Your changes are saved automatically.

To change the Password ( )

To change the password for Parental Controls, Parental Controls must be on.

1. Select "Change Password" on the Parental Controls screen.
2. Enter a new password.
3. Re-enter the new password.

To turn off Parental Controls ( )

1. Select "Turn off Parental Controls."
2. Enter the password and press SELECT.

When Parental Controls are turned off, the password is deleted and anyone can view any programs or watch any channels.

▶ Customize Channels

What are channel lists for? Features such as Search by Title and Search Using WishLists only look at programs available on channels selected in the Channels You Receive list. Your recorder also uses lists of channels to decide which channels the TiVo Live Guide displays and which channels to search in Browse By Channel.

There are three selections available in Customize Channels:

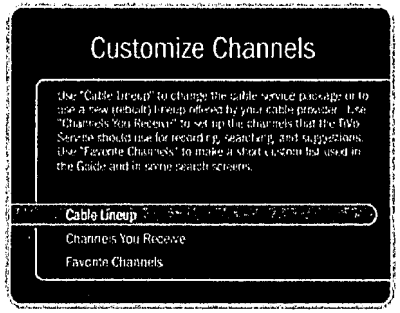
Cable Lineup. Select this if you have changed your subscription package or your channel lineup looks wrong in "Channels you Receive." On the next screen you'll be able to choose among available service packages based on your zip code.

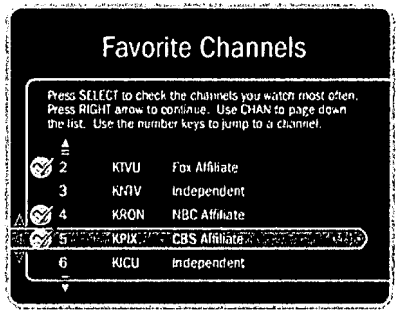
Channels You Receive. The Channels You Receive list starts with all the channels included in your service package. It can be customized to include only channels you actually subscribe to and to reflect your viewing preferences (for example: if you never watch a channel and don't plan to set up any recordings on it, or let the TiVo service search for programs on it, you can de-select it here).

Favorites. The Favorites list is for channels you watch frequently. Include only a few channels in this list, so that you can quickly look at what's coming up on them.

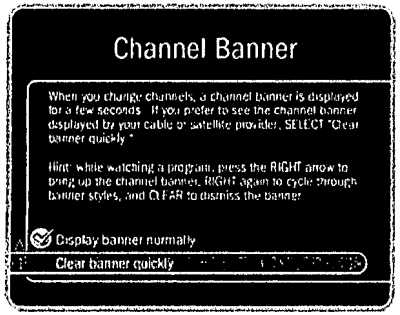
To set up a custom channel list:

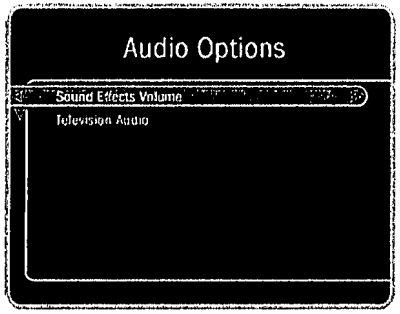
1. Select the Channels You Receive or Favorite Channels list. A check mark appears to the left of channels that are part of the selected list.
2. To remove or add a channel, highlight it and press SELECT. (You can speed through the list with the CHAN UP/DOWN. To go directly to a specific channel, press the number buttons, then press ENTER/JUMP.)





In the event that there is a change to your cable or satellite subscription package, a TiVo message will let you know what the change is. You must then go to Customize Channels and make the Channels You Receive list reflect the change.





3. Your changes are saved automatically. Press LEFT or RIGHT arrow to return to the Customize Channels screen.

▶ Channel Banner

Normally, when you change channels, a Channel Banner is displayed for a few seconds. If you want the channel banner to disappear quickly, select "Clear banner quickly."

▶ Audio Options

Sound Effects Volume. Allows you to change the volume or turn off your recorder's sound effects (the tones played when you press buttons on the remote control). The default setting is Medium.

Television Audio. This option lets you select the recorder's default audio output option. You can choose to have the default audio in stereo or mono, or have a secondary audio program (SAP) recorded when one is available.

Secondary audio programs are generally audio broadcasts in a language other than English. If you choose to record SAP and there is a secondary audio program, it will be recorded. The SAP may be in Spanish, French, Japanese or some other language.

▶ Video Recording Quality

You can increase the time available for video recording on your recorder much the same as you can choose "standard play" (SP) or "extended play" (EP) when using a VCR to tape a program. The recorder, however, offers you four levels of Video Recording Quality instead of just two. The choice you make here will be used unless you change the Video Recording Quality (on the Recording Options screen) when you schedule the recording (for details, see page 35). Two different Video Recording Qualities cannot be used on one recording.

The recording quality choices available are Best, High, Medium, and Basic. The default is Best. Basic quality takes up about one-third the space of Best quality, so it gives you about three times the amount of space for programs. You may wish to experiment with different levels and then reset your default.

One hour of Best Quality equals about:	Suggested use:
3 hours of Basic Quality	News
2 hours of Medium Quality	Daytime Talk Shows, Animation
1.5 hours of High Quality	Dramas, Films
1 hour of Best Quality	Sports, Action Movies

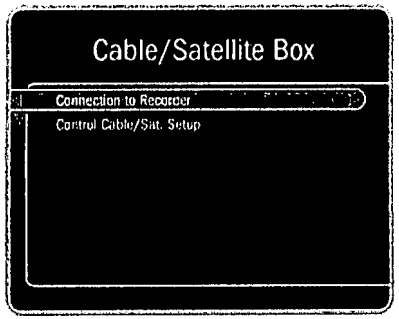
The recorder automatically uses Best Quality when displaying live TV. However, when it records a program, the recorder uses the Video Recording Quality you specified for that program. If that quality is not Best, you may notice the difference when recording starts.

▶ TiVo Suggestions

You can turn off automatic recording of TiVo Suggestions. When automatic recording is on (the default), TiVo Suggestions may be recorded onto available space. Programs you have recorded or scheduled to record will never be deleted to make room for suggestions. Also, if space is needed to save programs you have scheduled to record, suggestions are the first things to be deleted. (For more information on TiVo Suggestions, see page 45.)

▶ RF Video

If you use an RF coaxial cable as the input to your recorder, you may see static on some channels. You can use options on the RF Video screen to smooth the video, which will decrease the static and improve the picture on these channels. However, it will cause images on all channels carried to your recorder on an RF cable to lose some sharpness.



If you change video sources, for example, by changing from cable to satellite service, you should repeat Guided Setup (go to Messages & Setup, then Restart or Reset System, then Repeat Guided Setup).

Your recorder should NOT be used with a digital PBX phone system. Doing so may permanently damage your recorder's modem and will void your warranty. See your *Installation Guide* for more information.

▶▶ Recorder & Phone Setup

▶ Cable/Satellite Box

Select Cable/Satellite Box if you want to change the connection of your cable or satellite box to the recorder—for example, if you decide to replace a Composite cable connection with an S-Video connection. You should also select this if you want to change the way your cable box is set up to interact with the recorder. For example, if you buy a new cable box, you can find the correct IR codes for changing channels on your new cable box with your TiVo remote here.

Connection to Recorder. Select this if you change the cables you use to connect your cable or satellite box to the recorder. The next screen you see depends on whether you have one or two video sources. For details on getting through these Connection to Recorder screens, see page 7.

Cable Channel Changing, Satellite Channel Changing, or Channel Changing. (The name of this selection changes depending on the video source to your recorder.) Use this selection if you change the type of control cable (IR or Serial) you use to change channels on your cable or satellite box, or if your cable or satellite box is replaced by another make or model.

▶ Phone Connection

The recorder makes a brief daily phone call to get updates to the TiVo service; program information for the TiVo Live Guide, Search by Title, WishList searches, and updates to TiVolution Magazine and Showcases. The recorder usually uses the phone for less than ten minutes for a daily call. You may receive service updates to your recorder from time to time. In such cases, it may take longer, but this happens rarely (a few times a year).

On the Phone Connection screen you can see details, including the time of the last successful call and last call attempt, and the status of the last call. You also have the following options:

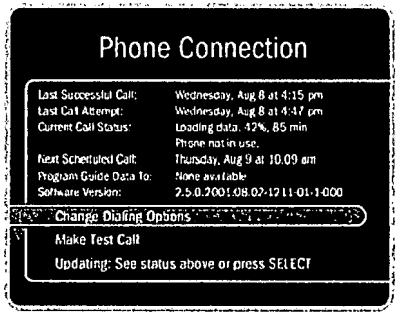
Make Test Call. When you select this, a test call to the TiVo service will start automatically. You may wish to use this option for troubleshooting or other unusual circumstances. Test calls usually only take a couple of minutes. When the call has finished, press SELECT to continue.

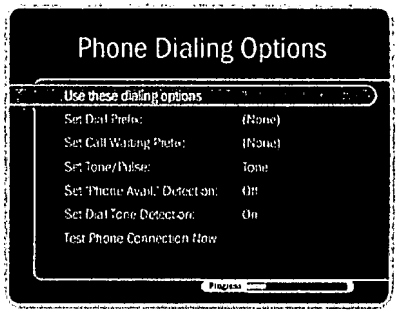
Make Daily Call Now. Under normal use, you do not need to make the daily call manually. However, for troubleshooting or other unusual circumstances, you may wish to use this option. After you start the call, the status indicator reads "Starting Up" and will change as it goes through several stages. You can watch live TV, set up recordings, and search for programs while the call is in progress.

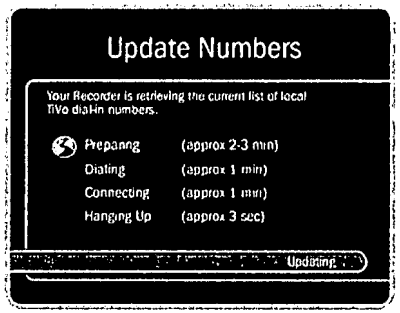
Change Dialing Options. You can change the following settings (if you make a mistake while entering a change, use the BACK button to backspace):

Set Dial-In Number. Use this to change the number the recorder uses to make test calls and daily calls. To change it:

1. Select "Set Dial-In Number." The Area Code screen appears.
2. Use the number keypad on the remote to set the area code, then press SELECT. If you change the area code, or if the recorder has not made a daily call in the last twenty-four hours, the Update Numbers screen appears and the recorder calls the TiVo service to retrieve a list of local dial-in numbers. After the phone call, press SELECT. The Dial-In Number screen appears.
3. Use the UP/DOWN arrow to choose one of the listed phone numbers. The recorder will use this number for daily calls to the TiVo service. Then press SELECT.







If your area code has no access numbers, you can press LEFT arrow to return to the Area Code screen and try a nearby area code. Toll charges may apply and are your responsibility.

4. The Dialing Format screen appears after you have chosen a dial-in number. You should use this screen to tell the recorder which dialing format to use. For example: should the dial-in number be preceded by your area code and should a "1" precede the area code? In some areas, even local numbers must be dialed using the area code. Press SELECT to return to the Phone Dialing Options screen.

   To test your new dial-in number, select "Test Phone Connection Now." The Test Phone Connection screen appears and a test phone call begins. When the call completes, you should see the message "Test Succeeded!" Press SELECT to return to Phone Dialing Options.

Set Dial Prefix. Use this option if the recorder must use a prefix to reach an outside line (for example, the recorder may need to dial "9" before it dials out). Use the number keys on the remote control to enter the prefix. Press the PAUSE button after you have entered the prefix. This will insert a comma, which will create a two second pause after the prefix is dialed.

Set Call Waiting Prefix. If you have call waiting, you may choose to disable it while the recorder is making a call, so that the recorder's phone call is not interrupted. If you do not disable it, the recorder may drop the call and allow the second call to ring through, depending on your phone system. The recorder will then try its call again later. The most common code that phone companies use to disable call waiting is *70 (check with your phone company to find out how to disable call waiting in your area). Press the PAUSE button after you have entered the prefix. This will insert a comma, which will create a two second pause after the prefix is dialed.

Set Tone/Pulse. If your phone system uses pulse dialing, rather than tone dialing, you can change the setting to pulse here. (Today, most phone systems are tone.)

Set "Phone Avail." Detection. When Set 'Phone Avail.' Detection is on, the recorder can determine whether the phone line is in use by detecting voltage on the line. This allows it to avoid disrupting a call in progress (such as another modem call).

This setting is off by default. With 'Phone Avail.' Detection turned off, if you are on the phone when the recorder tries to call, you may hear a click on the line. If you have another modem call in progress (on your computer or other device), that call may be disrupted if the recorder attempts to call the TiVo service. If you have a standard dial tone, and 'Phone Avail.' Detection is off, turn on Dial Tone Detection (below).

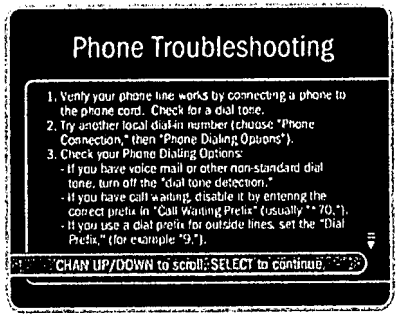
If you are experiencing "Failed, Line unavailable" errors, or if the recorder is not making daily calls, you may have a low-voltage phone system that the recorder cannot detect. In this case, it's best to have 'Phone Avail.' Detection off.

Set Dial Tone Detection. This setting is on by default. If you leave it on, the recorder will check for a dial tone before it starts dialing. However, if you have a non-standard dial tone, or a stuttering dial tone (as some voice messaging systems have), the recorder will be unable to detect the dial tone and will not make its daily call.

Restore previous options. The recorder must make a successful test phone call before it will accept changes to Phone Dialing Options. If you want to restore your previous dialing options and continue past this screen without making a test phone call, select "Restore previous options."

▶ Phone Troubleshooting

This screen provides tips that may help you troubleshoot problems with your phone calls.



With Dial Tone Detection and 'Phone Avail.' Detection both turned off, if you happen to be talking on the phone when the recorder tries to call you will hear the modem dial and try to communicate with the TiVo service.

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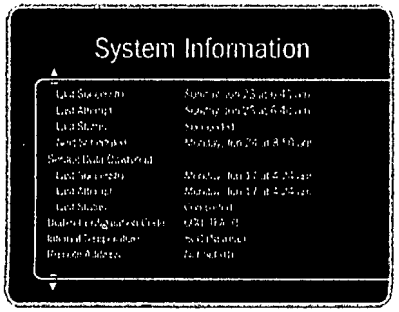


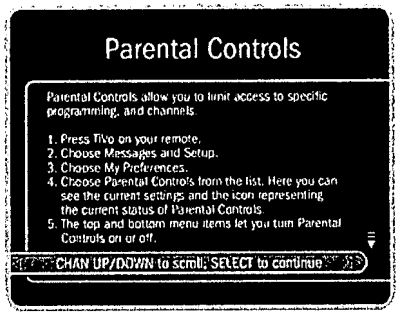
▸▸ System Information

The System Information screen provides general information about your recorder, including its Service Number, manufacturer, model number, software version used, storage capacity, and information about recent service calls. You'll need some of this information if you call Customer Support. You can use the CHAN UP/DOWN button to see the rest of the information on the screen.

▸▸ Troubleshooting

▸ Parental Controls Troubleshooting

This screen provides a brief description of how to use Parental Controls. Use CHAN UP/DOWN to see all of the text on the screen. (For details on Parental Controls, see page 53.)



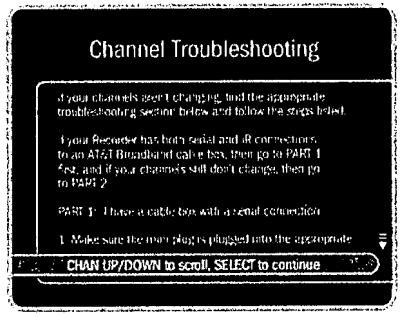
▸ Phone Troubleshooting

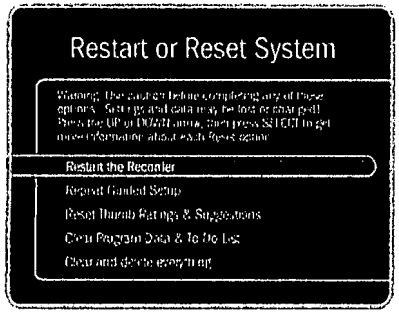
This screen provides tips to help you troubleshoot problems with your phone connection. Use CHAN UP/DOWN to see all of the text on the screen.

▸ Channel Troubleshooting

This screen provides tips to help you troubleshoot channel changing problems if you are using a satellite or cable box.

- The tips at the top of the screen are for cable or satellite boxes that attach to the recorder through a serial connection.
- You may have to use CHAN UP/DOWN to see the second set of tips, which deal with cable or satellite boxes using IR (infrared) connections to the recorder. You can also find tips in Chapter 6 and additional troubleshooting at *www.tivo.com/support*.





▶▶ Restart or Reset System

You may need to restart the recorder as a routine troubleshooting step. The other options on this screen erase information and restore original factory settings. Selecting a reset option brings you to a warning screen. To continue press THUMBS DOWN three times, then press ENTER.

Restart the Recorder. Shuts down the recorder and starts it up again. It will not affect recorded programs, Season Pass recordings, WishList searches, or TiVo Suggestions.

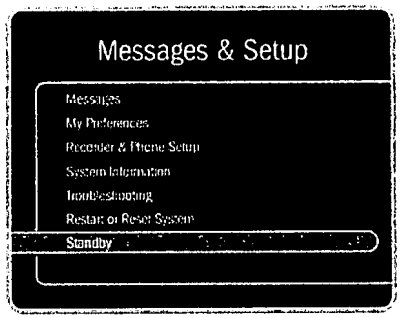
Repeat Guided Setup. You will have to repeat Guided Setup if you move or if you change your cable or satellite provider. Repeating Guided Setup will reset the Channels You Receive and Favorites channel lists to the factory settings. It will not affect recorded programs, Season Pass recordings, WishList searches, or TiVo Suggestions.

Reset Thumb Ratings and Suggestions. Removes all Thumbs Up and Thumbs Down ratings and deletes the list of TiVo Suggestions under Pick Programs to Record. It does not delete TiVo Suggestions that have been recorded and are in the Now Playing List.

Clear Program Data and To Do List. Clears all program information, cancels all Season Pass recordings and everything in the To Do List, and removes all Thumbs Up and Thumbs Down ratings. It does not delete programs in the Now Playing List. The recorder acquires new program information during the next daily call. Completing this process may take over an hour.

Clear and delete everything. Clears all Season Pass recordings, WishList searches, Thumbs Up and Thumbs Down ratings, TiVo Suggestions, Now Playing List recordings, program information, the To Do List and setup information, including the Channels You Receive and Favorite Channels lists. It also clears the current password and resets Parental Controls to the factory specified default. Completing this process may take over an hour.

▶▶ Standby



You can put your recorder in Standby mode by selecting Standby in Messages & Setup. To return to normal mode from Standby, press either the TiVo button the or LIVE TV button. (On some remotes, there is a POWER button that puts the recorder in Standby mode and takes it back out.)

In Standby mode:

- Your TV shows a black screen and the lights on the front of the recorder go out.
- Programs that are being recorded or are scheduled to record will still be recorded. (If a program is being recorded, the red light will turn on.)
- The recorder will still make a daily phone call. (If the recorder is making a phone call, the yellow light will turn on.)
- If you temporarily turned off Parental Controls, Standby mode re-enables them. (See page 53 for more on Parental Controls.)
- The recorder will continue to save a portion of live TV—up to 30 minutes of programming.
- If live TV was paused when Standby was selected, the recorder will remain paused for up to 30 minutes.
- If the TiVo Live Guide was set to display a category filter, filtering will be turned off.

CHAPTER 6

Troubleshooting

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▸▸ Customer Support

When you have a question:

1. **Use this chapter.** It contains troubleshooting on the following topics:

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Questions About Live TV 81
Questions About Recording Programs 82
Questions About Conflicts 86
Questions About Parental Controls 89
Questions About Audio/Video 90
Questions About the TiVo Service 93

2. **Use online support.** Go to the Customer Support section of *www.tivo.com/support.* You'll find online customer support on a number of topics, including setting up IR control and troubleshooting your phone connection.
3. **Use the troubleshooting screens on your recorder.** On your recorder, go to TiVo Central, then Messages & Setup, then Troubleshooting. You will find troubleshooting screens for Parental Controls, your phone connection, and your channels.
4. **Call Customer Support.** Refer to the *Installation Guide* for Customer Support contact information, and give us a call.

▶▶ Questions About the Recorder's Phone Calls

▶ Why does the recorder have to be connected to a phone line?

- The recorder needs to be connected to the phone line so that it can make an automatic daily call to the TiVo service. This call downloads program information, which tells the recorder when programs are scheduled to air and on what channel. The call may also download additional information from the TiVo service, such as Showcases, TiVolution Magazine, and service updates (if any).

  In addition, the phone call sends anonymous viewing information back to TiVo—that is, anonymous information about viewing choices, which do not identify you as an individual or household. TiVo has no way to access any of your personally identifiable viewing information from your recorder without your prior consent. Without your consent, the TiVo service has no way of knowing what shows you—as an individual or household—have watched, recorded, or rated with Thumbs Up or Thumbs Down.

▶ Do I need to keep the phone connected all the time?

- Unless it is an inconvenience, we recommend that you leave the phone line connected. The TiVo service will not interfere with your other needs for the phone line, and daily calls will keep the recorder's program information fully up to date.

  However, the recorder does not need to be connected all the time. After Guided Setup, you can connect the phone line once or twice a week. After you connect the recorder, you must manually start a daily call. To start a daily call, from TiVo Central, select Messages & Setup, then Phone Connection, then select "Make Daily Call Now."

▶ My recorder is not making the setup or daily call to the TiVo service.

- First, verify that your phone line is working by connecting a phone to it, then listening for a dial tone. Make sure the phone cord is connected to both the recorder and the

phone jack. If the phone line is working, continue with the troubleshooting here. If it is not working, contact your telephone service.

- The following tips require changing your Phone Dialing Options. To change Phone Dialing Options, go to TiVo Central, then select Messages & Setup, then Recorder & Phone Setup, then Phone Connection, then Change Dialing Options.

  After you change a Phone Dialing Option, the recorder will make a test call to verify whether or not your problem was solved.

  - Try another local dial-in number. Select "Set Dial-In Number." Confirm your area code, then select a new number from the list of available numbers for your area.
  - If you have voice mail or use another non-standard dial tone, turn off "Dial Tone Detection." (Select "Set Dial Tone Detection," then select "Off.")
  - If you dial a prefix for outside lines, be sure it is entered on the Phone Dialing Options screen. To enter or change a prefix, select "Set Dial Prefix," then follow instructions on the screen. For example, if you must dial 9 to reach an outside line, select "Set Dial Prefix," then press "9" then PAUSE. (This enters a 9, followed by a comma. The comma inserts a pause.)
  - If you have call waiting, be sure that it is disabled during the daily phone call. (Select "Set Call Waiting Prefix," then enter the correct prefix, usually "*70,". You would enter "*70," by pressing CLEAR then "7" then "0" then PAUSE.)
  - Your phone line may have low voltage. Set 'Phone Avail.' Detection to "Off." (Select "Set Phone Avail. Detection," then select "Off.") If you have a cordless telephone, fax machine, or computer modem connected to the same line, try turning 'Phone Avail.' Detection off, as well. When 'Phone Avail.' Detection is

off, you may hear a click on the line when the recorder tries to call. This is the sound of the recorder picking up the line to see if it is free.

- If you use a wireless phone connection, connect the recorder to a standard wall jack and test whether the wireless modem jack is the source of the problem.
- If you have a caller ID box, try removing it from the line, since some models interfere with the recorder's ability to make a call.
- It could be that you have too much line noise due to the length of the phone cord. Try a shorter cord, or you can buy a line noise filter at your local electronics store.

▶ What if I need to use the phone while the recorder is making its daily call?

- You can interrupt the phone call. To do this, pick up the phone, then hang it up. Wait several seconds. Then when you pick it up again, there should be a dial tone. Repeat this process if necessary.

▶ What if my phone line is busy when the recorder tries to make a daily call?

- The recorder will continue to attempt to call several times a day until it is successful. You can check the status of the phone calls on the Phone Connection screen (from TiVo Central, select Messages & Setup, then Recorder & Phone Setup, then Phone Connection). The status of the most recent call is displayed near the top of the screen.

▶ Am I charged for the daily call to the TiVo service?

- TiVo uses a standard telephone line to provide the TiVo service (including the daily call and software updates) and is available as a local call in most areas. In some areas, however, local and long distance toll charges may apply. Telephone costs are not included in the TiVo service subscription, and you are responsible for any such telephone charges.

▸▸ Questions about Channels

▶ Can I watch one channel while recording from another?

- Yes. If you have cable without a cable box or antenna you can split the signal with an RF splitter. See your *Installation Guide* for instructions. (You will not have TiVo functionality on the channels you watch using an RF cable that goes directly to your TV.) Also, you can always watch any program stored in Now Playing while the recorder is recording a program.

▶ I can't get the channel to change.

If you use cable with no cable box:

- Be sure that you are using the TiVo remote and that you hold it so that the TiVo button points toward the recorder.
- Press any button on the remote. Does the red light above the TiVo button flash? If not, make sure that the batteries are positioned correctly in the remote. If they are, try a new set of batteries.

  If the red light does flash, does the green light on the front of the recorder change to yellow when you press any button on the remote? If it does not, restart your recorder by unplugging it, waiting 15 seconds, then plugging it back in.

If you use cable with a cable box:

- Make sure the cable box is turned on.
- Make sure you are using the TiVo remote control, and that you hold it so that the TiVo button points toward the recorder, not a cable or satellite box.

I can't get the channel to change (continued).

- Refer to the *Start Here* booklet to verify that the IR Control cable is positioned correctly.
- Press the TiVo button to go to TiVo Central, then select Messages & Setup, then Cable/Satellite Box, then Control Cable Setup. Verify the IR code you chose during Guided Setup. See page 8 for help choosing an IR code.
- If the installation instructions required you to connect a serial control cable, check that the Serial Control cable is plugged into the upper serial jack on the back of the recorder.
- Unplug the cable box from the wall, then plug it back in.

If you use a satellite receiver with an IR Control cable:

- Make sure the satellite receiver is turned on.
- Refer to the *Start Here* booklet to verify that the IR Control cable is positioned correctly.
- Press the TiVo button to go to TiVo Central, then select Messages & Setup, then Cable/Satellite Box, then Control Cable Setup. Verify the IR code you chose during Guided Setup. See page 8 for help choosing an IR code.
- Unplug the satellite box from the wall, then plug it back in.

If you use a satellite receiver with a serial control cable:

- You may have incorrectly specified the type of program guide for your DIRECTV satellite receiver. There are two types of program guides: MPG (Master Program Guide) and APG (Advanced Program Guide). First, unplug the power cord for the

I can't get the channel to change (continued).

satellite receiver and plug it back in. Next, go to TiVo Central, then Message & Setup, then Recorder & Phone Setup, then Cable/Satellite Box, then Control Cable/Sat. Setup and select "Satellite Box." On the Connection to Satellite screen, if you originally selected Serial-MPG, change your selection to Serial-APG. (If you originally selected Serial-APG, change it to Serial-MPG.) You can also check the manual for your satellite receiver (as well as the satellite receiver's system setup screen) for information on the type of program guide it uses.

▶ When I turn on my TV, I see a blue screen with a TiVo logo.

- Your recorder is having trouble tuning to the channel you are on. Follow these steps to restore the video:
  - Try changing channels. If the blue screen appears on just a few channels, you may be tuned to a channel to which you do not subscribe, or you may be experiencing a weak signal on a channel to which you do subscribe. If you do not subscribe to the channel, you should take it off the "Channels You Receive" list. (For more information, see page 59.) If you do subscribe to the channel, wait 24 hours to see if the signal improves, or call your cable or satellite provider.
  - If you have a satellite or cable box, go to Messages & Setup, Cable/Satellite Box, Connection to Recorder. Verify that you chose the same cable on this screen that you used to connect your satellite or cable box to the recorder.
  - If the blue screen appears on every channel, and you have a cable or satellite box, make sure it is turned on.
  - You may be experiencing a temporary cable or satellite outage; check with your cable or satellite provider.

- Your video cable may have come loose. Make sure all the cable connections on the back of your recorder are secure.
- Verify that you are receiving a video signal by temporarily connecting the video source directly to the TV. If you still do not see any video, there may be a problem with your cable, satellite or antenna equipment.
- Restart your recorder. (From TiVo Central, select Messages & Setup, then Restart or Reset System, then Restart the Recorder. On the Restart the Recorder screen, press THUMBS DOWN three times, then press ENTER. You will see the Welcome screen, and the system will restart within about 45 seconds. You can also restart the recorder by unplugging it, waiting 15 seconds, then plugging it back in.)
- The cables you are using to connect your recorder to your TV or other equipment may be damaged or defective. Try exchanging the cables connected to the recorder with other cables that you know are working properly.

▶ I can't go to one of my channels.

- You may be using a channel list that does not include the channel you want. Use the numbers on the remote control to enter the channel number, then press ENTER/JUMP. For more information on using a channel list, see page 59.
- The channel you want may be showing a program that exceeds a limit set with Parental Controls. In this case, you will see only a black screen with a notice that a limit has been exceeded. You will be able to tune to the channel if you use the Parental Controls password. (For more information on Parental Controls, see page 53.) If your cable or satellite box has a feature like Parental Controls, you may have to use the satellite or cable box's remote to disable it as well.

▶ I can't find all the channels I receive in the Channels You Receive list.

- Have you changed your satellite or cable provider, or changed your subscription package? If you have, you should repeat Guided Setup to specify your current cable or satellite provider and lineup. From TiVo Central, select Messages & Setup, then Restart or Reset System, then Repeat Guided Setup. Press THUMBS DOWN three times, and then press ENTER. You may need to check all of the available selections to find the right one since cable providers often change their lineups. For complete instructions on Guided Setup, see Chapter 1 of this guide.
- If you have not changed your cable or satellite provider, go to Messages & Setup, then My Preferences, then Customize Channels, then Channel Lineups. Look at your cable or satellite bill, or make your best guess at what your lineup is called. Select it here, then check the Channels You Receive list. If the channels are incorrect, try another Cable Lineup. If that does not work, refer to the *Installation Guide* for Customer Support contact information, and call TiVo Customer Support.

▸▸ Questions About Live TV

▶ Can I watch a program while it is being recorded?

- Yes, you can watch a program as it is being recorded; you can even start watching from the beginning while the rest of the program is recorded! You can also watch any program stored in Now Playing while another program is being recorded.

▶ The Channel Banner always says "To be announced."

- Your recorder probably does not have full program information. For details, see the question "I can't find my program in Search by Title or Search Using WishLists, even though I know it's on," on page 82.

▶ There aren't any shows listed in the TiVo Live Guide.

- Your recorder may not have program information. See "I can't find my program in Search by Title or Search Using WishLists, even though I know it's on," on page 82.
- If category filtering of the TiVo Live Guide is turned on, but no upcoming programs in the next six hours match both your filter and your Favorite Channels list, no programs will appear in the TiVo Live Guide. To view programs in the TiVo Live Guide again, use the TiVo Live Guide's Guide Options to turn off filtering. (See page 27.)

▶ I can't find my program in the TiVo Live Guide, even though I know it's on.

- You can choose a channel list or filter to use with the Live Guide. Not all programs or channels will be displayed if you have chosen to use a filter or the "Favorites" channel list. Press GUIDE to display the Live Guide, then DISPLAY (or ENTER) to choose "Channels You Receive" or to turn off filters. You can also add and remove channels on the "Channels You Receive" and "Favorites" channel lists. (See page 59.)
- Occasionally the program information provided by the networks includes errors. We would like to hear of any inaccuracies you discover so that we can work with our providers to correct them.

▸▸ Questions About Recording Programs

▸ I can't find my program in Search by Title or Search Using WishLists, etc., even though I know it's on.

- The recorder uses the Channels You Receive list to search for programs in all the features under Pick Programs to Record. To check if you've selected the program's channel, go to Messages & Setup, then My Preferences, then Customize Channels, then Channels You Receive. Does the channel have a check mark next to it? To give it one, highlight the channel and press SELECT. (For instructions on personalizing this list, see page 59.)
- Look on the Phone Connection screen (from TiVo Central, select Messages & Setup, then Recorder & Phone Setup, then Phone Connection) for the time of the last successful daily call for program information. If it was more than 36 hours ago, your recorder may be having trouble calling the TiVo service. Select "Make Test Call" to test the current phone settings. If the test call does not succeed, see the troubleshooting chapter in the *Installation Guide* for phone troubleshooting. Once you have made a successful test call, start a daily call by selecting "Make Daily Call Now." If your daily call is successful, new program information will be downloaded and organized, and become available to search in about 1 to 5 hours.
- Is your TiVo service account up to date? Check your account status on the System Information screen (from TiVo Central, select Messages & Setup, then System Information). If your account is suspended or closed and you wish to re-activate it, refer to the *Installation Guide* for Customer Support contact information and call TiVo Customer Support.
- Occasionally the program information provided by the networks includes errors. We would like to hear of any inaccuracies you discover so that we can work with our providers to correct them.

I cannot use features in Pick Programs to Record. The recorder says it is organizing program information.

- Your recorder may not have all its program information yet. The first time you go through Guided Setup, the recorder downloads program information from the TiVo service. The recorder then indexes this information in the background over the next 4-8 hours. As the program information gets indexed, more of it becomes available. After 8 hours, full information (for up to 2 weeks from the time of the last successful daily call) is available for you to use. Wait a few hours, then try to find your program again.
- If the recorder loses power while it is indexing program information, the indexing process will stop until the recorder makes a successful daily call to the TiVo service, and then will start again. If your recorder lost power while it was indexing program information, you can get it to start indexing again by plugging it in and then starting a call to the TiVo service. To start a call to the TiVo service, go to TiVo Central, then select Messages & Setup, then Recorder & Phone Setup, then Phone Connection, then Make Daily Call Now.

What happens if a sports event I have scheduled to record goes into overtime?

- The TiVo service cannot predict whether a sporting event might go into overtime, but we provide a feature that lets you add from one extra minute to three hours at the end of a recording just in case. We call the feature the Overtime Scheduler. The Overtime Scheduler has two options: "Start Recording" and "Stop Recording." Both are available on the Recording Options screen. You can even use the Overtime Scheduler to change the scheduled end of a recording while the program is being recorded. You can use the Overtime Scheduler with any kind of program, not just sports. For more information on Recording Options, see page 35.

If you are watching a program while it's being recorded, you can record an overtime segment in a couple of ways. One way is to go into Now Playing, select the recording, then select "Change recording options." On the Recording Options screen that appears, select "Stop recording." Use RIGHT arrow to increase the length of the recording by anywhere from one minute to 3 hours. Alternatively, you could choose to press the RECORD button after the regularly scheduled part of the program has finished.

▶ Is there a way to record a program that will not be aired for weeks or months?

- You can create an auto-recording WishList for programs that are not yet listed in the TiVo Live Guide. See page 43 for details on WishLists.
- If you know the date, time, and channel on which the program will air, you can create a manual recording to record it. You can create manual recordings by going to TiVo Central, then selecting Pick Programs to Record, then Record by Time or Channel, then Manually Record Time/Channel. (See page 48 for details.)

▶ How do I set the clock so that my shows are recorded on time?

- If you are missing the beginning or end of a show, it usually means that the broadcaster is not starting or stopping the show on time. You can use the Overtime Scheduler, described on page 36, to compensate for this.
- The TiVo service will re-sync your recorder's clock during every daily service call. If you set your time zone and Daylight Savings Time correctly in Guided Setup, you never have to worry! If you move to a new time zone, you can change your recorder's time settings by repeating Guided Setup. To start a daily call at any time, go to TiVo Central and choose Messages & Setup, then Recorder & Phone Setup, then Phone Connection, then "Make Daily Call Now."

How do I record a Pay Per View event?

- From live TV, catch up to the present broadcast by pressing the ADVANCE button. Then, order the program from your cable or satellite provider as you normally would—by using your satellite or cable box remote, or by calling your cable/satellite provider. (If the program violates a Parental Control limit—or a feature like Parental Controls on your cable or satellite box—make sure to disable both TiVo Parental Controls and your satellite or cable box's Parental Controls.) To record the program, search for it in Browse by Time. If there are no listings for Pay Per View events, record the showing with the Manually Record Time/Channel option under TiVo Central, then Pick Programs to Record, then Record Time/Channel.

Why wasn't my program recorded?

- Check Recording History for an explanation of why the program did not record. Recording History is the first selection in the To Do List (from TiVo Central, select Pick Programs to Record, then To Do List, then View Recording History). Here are some reasons why a program may not be available in Now Playing:
  - The program may have been canceled by the network.
  - If you had two Season Pass recordings that were on at the same time, only the Season Pass with the higher priority would be recorded. Priorities and the Season Pass Manager are described on page 49.
  - The program may have been deleted from Now Playing by someone else.
  - There may have been a conflict when requesting another program, and the proposed resolution was to delete the missing program earlier than planned. If you accepted that resolution, the program would have been deleted.

▸▸ Questions About Conflicts

▶ Can I record multiple programs simultaneously?

- No. You can watch any program in Now Playing while another is recording. However, you can only record one program at a time on your recorder, because it does not contain the necessary hardware to record two programs at once. The DIRECTV Receiver with TiVo has two tuners and can record two programs at the same time.

▶ How can I record a program (or programs) when there is a conflict?

- The recorder gives each repeating recording a priority. You can resolve some conflicts in favor of preferred programs by using the Season Pass Manager to change priorities. (See page 49.)
- If you encounter a conflict for a single episode, use "View upcoming episodes" to see if the program or episode you want will air at a different time.
- You can sometimes resolve recording conflicts by changing the "Stop Time" or "Start Time" Recording Options. (See page 35 for more about Recording Options.) For example, if you set a program to start recording one minute early, it may conflict with a recording that airs right before it. To resolve such a conflict, change the "Start Time" back to "On Time" on the Recording Options screen.
- If a single episode of a repeating recording conflicts with another program, you can select that episode in the To Do List and change it independently of the rest of the repeating recording.

▸▸ Questions About Now Playing

▶ Can I recover a recorded program that was deleted?

- No. There is no way to bring back a program that has been deleted from Now Playing. You can choose to save programs longer, though. See page 31 for details.

▶ Can I copy or archive programs to a Zip drive or any other computer storage media?

- The recorder does not copy or archive recordings to any device other than a VCR.

▶ I haven't scheduled enough programs to fill my recorder, but when I try to schedule more programs, the recorder says there isn't room.

- The TiVo service includes smart scheduling features that track not only how much space you currently have on your recorder, but also how much space will be needed in the future to record all of the programs you have scheduled. If your recorder will be full at some point in the future, the TiVo service informs you and suggests options—such as allowing some programs to be deleted early—that will allow you to schedule additional recordings. With the TiVo service, you always have the final say over what gets recorded and how long it is kept.
- In addition, the amount of recording space the recorder needs varies from channel to channel and from show to show. In general, the more action you see on your screen, such as in fast-moving sports or action movies, the more recording space is required. Weaker video signals may also require more space. The amount of space required for each show you record affects the total hours of recording capacity in your recorder.

How can I fit more programs in Now Playing?

- To make space, delete some programs in Now Playing. You delete a program by highlighting its title, then pressing CLEAR.
- Lowering the default recording quality will allow you to fit more programs in Now Playing. See page 60 for details.
- Set up Season Pass recordings with the Recording Option "First-run only." You'll only collect new episodes. You'll also be less likely to run out of space in Now Playing and less likely to encounter conflicts.

What does it mean when my recorder says programs will be deleted earlier than planned?

- By default, all programs are kept until space is needed. After that, programs you have not set to save longer may be deleted to make room for other recordings you request. The TiVo service includes smart scheduling features that keep track of when programs become available to be deleted, and of how much free space will be available at any given time in the future. If space will not be available to record a program you request, the TiVo service gives you the option of deleting some programs early to make more room. However, you always have the final say on how long the recorder keeps programs. You can delete a program at any time and can always change how long it is saved by changing the "Save until..." option. To see "Save Until...," select the program in Now Playing.

▸▸ Questions About Parental Controls

▸ My Parental Controls are not working.

- For Parental Controls to work, they must be on (and must not be temporarily turned off). When you enter your password to watch a program that violates Parental Controls, they are temporarily turned off. You can re-enable them on the Parental Controls screen (from TiVo Central, select Messages & Setup, then My Preferences, then Parental Controls), or by putting your recorder in Standby mode and then taking it out of Standby. You can put your recorder in Standby mode by going to TiVo Central and selecting Messages & Setup, then Standby. To return to normal mode from Standby, press either the TiVo button the or LIVE TV button. (On some remotes, there is a POWER button that puts the recorder in Standby mode and takes it back out.)

▸ I disabled Parental Controls, but I still can't tune to the channel I want.

- If your cable or satellite box has a feature like Parental Controls, make sure you have disabled them with the satellite or cable box's remote.
- You may be using a channel list that does not include the channel you want. Use the number buttons on the remote control to enter the channel number, then press the ENTER/JUMP button. For more information on using a channel list see page 59.

▶▶ Questions About Audio/Video

▶ The audio and video are out of sync.

- The audio and video may re-sync if you change channels.
- You may be able to re-sync audio and video by pressing the INSTANT REPLAY button on the remote control.
- Audio and video should re-sync if you press the TiVo button to go to TiVo Central, then press the LIVE TV button to return to live television.
- You can also try restarting your recorder. From TiVo Central, select Messages & Setup, then Restart or Reset System, then Restart the Recorder. On the Restart the Recorder screen, press the THUMBS DOWN button three times, then press ENTER. You will see the Welcome screen and the system will restart within about 45 seconds.

▶ My recorder was working, but now the picture does not move

- Try restarting your recorder. From TiVo Central, select Messages & Setup, then Restart or Reset System, then Restart the Recorder. On the Restart the Recorder screen, press the THUMBS DOWN button three times, then press ENTER. You will see the Welcome screen and the system will restart within about 45 seconds. You can also restart the recorder by unplugging it, waiting 15 seconds, then plugging it back in.

▶ I don't get a picture now, even though I have been able to get one in the past.

- Someone in your household may have placed the recorder in Standby mode. To return to normal mode from Standby, press either the TiVo button or the LIVE TV button. (On some remotes, there is a POWER button that puts the recorder in Standby mode and takes it back out.)

- Your TV may not be set to the correct input. Most TVs have an input button that says either "TV/Video," "Input," or "Source." It may be on the TV or on the TV remote control. Look at your TV and TV remote and try changing the input for your TV.
- If you have your recorder connected to a VCR, the VCR may not be set to the correct input. Most VCRs have an input button that says either "TV/Video," "Input," or "Source." It may be on the VCR or on the VCR remote control. Look at your VCR and VCR remote and try changing the input for your VCR.
- Check to make sure all of the appropriate cables are firmly connected to your recorder, television and other audio/video equipment. For help with your cable connections, see the *Start Here* booklet and the *Installation Guide.*

▶ I can't select an alternate audio track.

- Secondary audio programs (SAP) are not available for all programs. If you set the SAP as the default audio, programs that have SAP will use it. Only one audio track is saved with recorded programs. If SAP is the default audio and a program you are recording has an SAP, the SAP will be the recorded program's only audio. You can set the default audio on the Television Audio screen (from TiVo Central, select Messages & Setup, then My Preferences, then Audio Options, then Television Audio).
- Recorded programs, such as those in Now Playing, always have only one audio track, the one they were recorded with.
- You cannot change the audio track if you are watching a live program, but are not caught up to live TV. Catch up to live TV by pressing the ADVANCE button. Changing the audio program will clear the saved part of the program you are watching, so you will only be able to rewind live TV to the point where you changed the audio program.

Programs are playing in the wrong language.

- You may have selected the secondary audio program (SAP) as the default audio on the Television Audio screen. Most programs with SAP use it to broadcast in an alternate language. To turn off the SAP, reselect the main audio program on the Television Audio screen (from TiVo Central, select Messages & Setup, then My Preferences, then Audio Options, then Television Audio).

My audio system is set up to play in stereo, but it is only playing mono.

- Make sure that "Main Audio Program (stereo)" is selected on the Television Audio screen (from TiVo Central, select Messages & Setup, then My Preferences, then Audio Options, then Television Audio).

▸▸ Questions About the TiVo Service

▸ Will my recorder still work without the TiVo service?

- Without the TiVo service, your recorder will have extremely limited functionality. The recorder was designed to be used exclusively with the TiVo service. The TiVo service is required for proper operation of the recorder. No functionality is represented, warranted or should be expected without a subscription to the TiVo service. The recorder uses the program information provided by the TiVo service to record the programs you request, to provide Season Pass functionality, to power the TiVo Live Guide, to allow you to search for programs by name, and so on. The TiVo service may also provide you with new Showcases, TiVolution Magazine, and service updates (if any).

▸ What happens if my recorder loses power temporarily?

- Everything is saved—including your Now Playing programs—regardless of the length of time the recorder is without power. The only thing you will miss is a recording that was scheduled to occur during the time the power was out.

▸ Will the TiVo service collect information about my viewing habits?

- TiVo has designed its system and instituted policies to ensure that TiVo is unable to access any of your personally identifiable viewing information without your prior consent. TiVo does collect anonymous viewing information; that is, information about viewing choices made while using your recorder, which does not identify you as an individual or household. In other words, there is no contact information associated with the viewing information that could identify the viewing information as coming from you or your household. If you don't want even your anonymous viewing information used in any way, you may simply call and tell us, and we will stop collecting it. (Refer to the *Installation Guide* for Customer Support contact

information.) For more information on the TiVo Privacy Policy, see Chapter 7 or go to *www.tivo.com/privacy*.

▶ How is information from the TiVo service delivered to my recorder?

- The recorder automatically makes a daily phone call to the TiVo service. This call downloads program information and other data. Information is also occasionally delivered by a special TiVo program that is broadcast late at night and recorded when it does not conflict with any of your previously scheduled recordings.

CHAPTER 7

Privacy and Service

TiVo Privacy Policy 97

Digital Video Recorder—TiVo Service Agreement 103

TiVo Inc. ("TiVo") is committed to protecting the privacy of your personal information. The TiVo Privacy Policy, which applies to your use of the TiVo service, is published on the World Wide Web at *http://www.tivo.com/privacy*. We have printed it here for your convenience, but we encourage you to check the website or call us for a copy of the current Privacy Policy.

Use of your Digital Video Recorder (DVR) with the TiVo service will signify your acceptance of these privacy policies. Thank you for being a TiVo customer and letting us serve you!

▶ Summary of the TiVo Privacy Policy

TiVo knows how important personal privacy is to you, so we have designed our system and established strict policies to help protect the privacy of your Personally Identifiable Viewing Information. In summary, we want you to know that:

- The TiVo DVR collects certain types of information from its users, including Anonymous Viewing Information, Diagnostic Information, Commerce Information, and Service Information.
- TiVo has no way to access any of your Personally Identifiable Viewing Information from your DVR without your prior consent. Absent your consent, the TiVo service has no way of knowing what shows you—as an individual or household—have watched, recorded, or rated with "Thumbs Up" or "Thumbs Down."
- TiVo does collect Anonymous Viewing Information; that is, information about viewing choices made while using your DVR, but that does not identify you as an individual or household. In other words, there is no personally identifiable information associated with the viewing information that could identify the viewing information as coming from you or your household. TiVo also collects Diagnostic Information from a small number of randomly sampled DVRs for quality control purposes. If you don't want even your Anonymous Viewing Information or Diagnostic Information used in any way, simply tell us by calling our toll free number (1-877-367-8486).
- If you affirmatively elect to engage in a commercial transaction using the TiVo service, such as by responding to an advertisement on the TiVo service, TiVo will collect and disclose your Commerce Information to the commerce partner fulfilling the transaction.
- TiVo intends to make available new services in the future. These services will be governed by the privacy policies of the respective service providers.

▸▸ TiVo Privacy Policy

Please read this Privacy Policy carefully. It provides important information on how your privacy is protected when using the TiVo service.

In order to provide you with a better, more satisfying television experience, TiVo Inc. ("TiVo") collects and uses certain types of information, as described in this Privacy Policy. The Subscriber Information (defined below) you provide to the TiVo Digital Video Recorder ("DVR") in your house and to us at TiVo enables your DVR to select programs you want it to record and to suggest programs you might enjoy.

By using your DVR and TiVo service, you consent to: (a) the provisions of this Privacy Policy and (b) the privacy preferences explained in Section 4.1. This Privacy Policy explains our commitments to your privacy in the following areas:

1 **Our Subscriber Information Definitions.** In discussing the kind of information TiVo collects, it is important to distinguish between anonymous information and other information that specifically identifies you or your household. Too often, people refer to "personal information" or "personally identifiable information" without really making clear what they mean. TiVo has developed the following definitions to help clarify this important issue. We use "Subscriber Information" as a general term that refers to any information relating to you or your use of the TiVo service. The following are more specific types of Subscriber Information.

1.1 **"Account Information"** means information about your TiVo service account, including your Contact Information (defined below) and other information linked to your Contact Information such as the model and Service Number of your DVR, your zip code, software version used, your TV programming source (cable, satellite or an antenna), the type of cable hook-up (digital or analog) and level of service (basic or premium), privacy preferences, and the cable or satellite box model that you use. You provide us with this information when you register as a subscriber to the TiVo service and subsequently set up your DVR to receive the TiVo service in your home. This basic Service Information is sent to TiVo on an ongoing basis to enable TiVo to provide the TiVo service to your DVR. Account Information also includes information we may receive about you in a communication from you or a third party with us. Account Information does not include any Personally Identifiable Viewing Information, or Anonymous Viewing Information, as defined below.

a **"Contact Information"** means information that allows someone to identify or contact you, including, for example: your name, address, telephone number, and e-mail address. Contact Information is a subset of Account Information and is thus linked to your DVR's Service Number.

b **"Service Information"** means information necessary for TiVo to provide service to your DVR. Examples of Service Information include your software version number, your TV programming source, level of service, and the success status of the last attempted service call (i.e., daily call). This information is always transmitted to TiVo during a service call.

1.2 "Personally Identifiable Viewing Information" means information about the viewing choices that you and those in your household make while using your DVR, if that information is linked to or associated with your Account Information. The DVR stores your viewing information so that it may recommend viewing choices and personalize your viewing experience. We have worked very hard to design our system to ensure that no Personally Identifiable Viewing Information may be sent to TiVo without your express consent. You may choose to consent to TiVo's collection of Personally Identifiable Viewing Information by changing your privacy preferences as provided in Section 4.1.

1.3 "Anonymous Viewing Information" means information about viewing choices that you and those in your household make while using your DVR, but is not associated with or linked to any other information TiVo has about your account. Your DVR sends Anonymous Viewing Information to TiVo on an ongoing basis. This information allows TiVo to know that a subscriber from a particular zip code watched certain programming but we are unable to associate those viewing choices with you. You may request that TiVo block the collection of Anonymous Viewing Information from your DVR as described in Section 4.1.

1.4 "Diagnostic Information" means a log file containing detailed information about the operation of a DVR, such as memory consumption, user interface response time, disk space, enclosure temperature, and enclosure fan speed. TiVo collects Diagnostic Information Logs for a small number of randomly sampled DVRs for quality control and technical troubleshooting purposes. Diagnostic Information Logs contain your DVR's Service Number and are thus associated with your Account Information. You may request that TiVo block the collection of Diagnostic Information Logs from your DVR as described in Section 4.1.

1.5 "Commerce Information" means personally identifiable information that enables a commerce partner to fulfill your request to participate in a promotion or transaction. From time to time, TiVo may present special offers and/or enable you to purchase goods and services from TiVo, or third party advertisers or promoters. You would be informed of such offers on screen while using the TiVo service. Should you decide to take advantage of such an offer or engage in a transaction, TiVo will collect and communicate your relevant Contact Information and your interest in a specific offer or transaction to the commerce partner sponsoring the promotion or transaction. In addition to fulfilling your request, that commerce partner may also use your Commerce Information to send you other information in which you might be interested consistent with its own privacy policies. This information is collected and disclosed by TiVo only upon your affirmative response to an offer.

2 Use of Subscriber Information

2.1 Account Information. We use your Account Information to establish and service your TiVo account, bill you for TiVo services, offer you new services when they are available, and other legitimate business purposes. For example, we use your name, address, email address, and phone number to create your account with TiVo, to communicate with you regarding new services, and to exclude you from offers for services you may already have. We use your credit card information to bill you for TiVo services. We use your Service Information to service your account and provide the necessary resources to your DVR. Knowing your zip code, programming source, and information about your cable or satellite box model

allows us to determine which programming information (e.g., times and channels of programs) to send to your DVR.

We use your Account Information to communicate with you about upcoming features in the TiVo service or promotions that might interest you. You may opt not to receive communications in the future as explained in Section 4.1. We also use your Account Information in aggregate form (i.e., excluding any Contact Information) to generate demographic profiles of our subscribers as a whole to assist us to, for example, identify future subscribers to the TiVo service or other services.

2.2 Personally Identifiable Viewing Information. Your DVR uses your viewing information to tune, schedule, record, and recommend programs for you. The DVR may also use this viewing information to select advertisements or other promotions for you that you may be interested in. TiVo does not collect your Personally Identifiable Viewing Information without your consent. Absent your consent, no "tag" is added to the anonymous viewing files transmitted from DVRs to TiVo that would enable TiVo to identify the DVR from which it came.

If you expressly choose to allow TiVo to collect your Personally Identifiable Viewing Information, TiVo may use this information for surveys, audience measurement, and other legitimate business purposes.

2.3 Anonymous Viewing Information. We use Anonymous Viewing Information to develop reports and analyses about what programs, advertisements, and types of programming our subscribers (as a whole or in subgroups) watch or skip, or for other programming or advertising research. For example, we use Anonymous Viewing Information to develop inferences that people who watch show X also watch show Y. We also use Anonymous Viewing Information to help with the investigation of technical issues with our systems.

3 Disclosure of Subscriber Information

3.1 Generally. We disclose aggregated Account Information and aggregated Anonymous Viewing Information and any reports or analyses derived therefrom, to third parties including advertisers, broadcasters, consumer and market research companies and other organizations.

3.2 Manufacturing and Service Provider Partners. In certain instances we will disclose to our hardware manufacturing partners and service provider partners (for example DIRECTV) the Account Information of subscribers who use a DVR made by that manufacturing partner or receive a service from that service provider partner. However, TiVo contractually binds our manufacturing and service provider partners to comply with the provisions of this Privacy Policy; our manufacturing and service provider partners are legally liable for misuse of Subscriber Information.

3.3 Contractors and Third Party Service Providers. We use contractors to help with some of our operations. Some of these contractors will have access to our databases of Subscriber Information on a temporary basis for specific tasks. TiVo also uses third parties to help with certain aspects of its operations, which may require disclosure of your Subscriber Information to them. For example, TiVo may use a third party to communicate with you (via telephone, email, or letter) about your account or upcoming features or services, to mail rebate checks, to process and collect payment for your TiVo service via your credit card, to generate demographic profiles based on Subscriber Information of current TiVo subscribers, and to perform other work that we may need to

outsource. TiVo contractually binds these contractors and third parties to use your Subscriber Information only as necessary to perform the services they are asked to perform; such contractors and third parties are legally liable for misuse of Subscriber Information.

3.4 The "Corporate Family." Although TiVo currently does not have a parent company, any subsidiaries (other than TiVo International, Inc. and TiVo UK Ltd., which provides TiVo service in the United Kingdom), joint ventures, or other companies under a common control (collectively, "affiliates"), it may in the future. TiVo may share some or all of your Subscriber Information with these affiliates, in which case TiVo will require its affiliates to honor this Privacy Policy. If TiVo Inc. is acquired by another company, that company will possess the Subscriber Information collected by TiVo and it will assume the rights and obligations regarding your Subscriber Information as described in this Privacy Policy.

3.5 Commerce Partners. When you elect to participate in a special offer or engage in a transaction with TiVo or a third party advertiser or promoter, TiVo will collect and disclose your Commerce Information to the commerce partner sponsoring and/or fulfilling the promotion. In addition to fulfilling your request, that commerce partner may also use your Commerce Information to send you other information in which you might be interested consistent with its own privacy policies. This information is disclosed only upon your affirmative response to an offer.

3.6 Factors Beyond our Control. Your privacy is very important to us. Due to factors beyond our control, however, we cannot fully ensure that your Subscriber Information will not be disclosed to third parties. For example, we may be legally obligated to disclose Subscriber Information to the government or third parties under certain circumstances, or third parties may circumvent our security measures to unlawfully intercept or access your Subscriber Information.

4 Your Choices Regarding Subscriber Information

4.1 Limits on TiVo's Collection, Use, and Disclosure of Subscriber Information. The default privacy preferences, to which you hereby consent if you do not request a change to your settings, do not allow TiVo to collect Personally Identifiable Viewing Information, but do allow TiVo to collect, use, and disclose Anonymous Viewing Information and Diagnostic Information logs, in addition to Account Information, in manners consistent with this Privacy Policy. Commerce Information is collected, used, and disclosed only upon your affirmative response to an offer.

You may choose to change your privacy preferences to allow TiVo to collect Personally Identifiable Viewing Information. Even though Anonymous Viewing Information does not include any Account Information whatsoever, you may request that TiVo block the collection of such information from your DVR. You may also request that TiVo limit the collection of Diagnostic Information Logs from your DVR. You may further opt not to receive communications that we send to you based on your Account Information. If you make this choice, you understand that we will not be able to inform you about any upcoming features, improvements, or promotions regarding your TiVo service. In all cases, however, we will collect and use your Account Information (including Service Information) to enable us to provide your DVR with the TiVo service.

If you would like to change your privacy preferences, you must either (a) send TiVo a signed written request, (b) call us at 1-877-367-8486 to request a change.

4.2 Review and Update of Account Information. We believe you have a right to know the Account Information collected and stored by TiVo and to update or change any Account Information you believe is incorrect. You may make a request by telephone, mail, or via the web (when available) to review your Account Information and we will mail you a printout of your Account Information. If you request that certain Account Information be changed, we will make the changes to the extent commercially practicable. In addition, we will take commercially reasonable steps to propagate those changes to third parties with whom we may have shared your Account Information pursuant to this Privacy Policy.

4.3 How to Delete Information. Should you decide to discontinue your TiVo service, you may make that request by telephone or mail and we will suspend billing for the TiVo service. After you discontinue the TiVo service, TiVo will maintain your Account Information only as long as necessary for business purposes. In addition, although we delete your Account Information from our "live" database, your Account Information may remain in our archives and records until it is routinely destroyed.

5 Comment Regarding Children. TiVo feels strongly about protecting the privacy of children and encourages parents to be involved in the television viewing of their minor children by, for example, limiting the types of content minor children can watch.

6 Separate Rules for the TiVo Website. We have a separate privacy policy that covers general browsing activities on our website. However, if you register for TiVo service on the Web, or log in to your account preferences page (when available) to make changes to your account or request services, this Privacy Policy will apply to the Subscriber Information you provide to us in those instances.

7 Security of Subscriber Information. When you contact us by email or phone regarding your account, we ask you for certain Account Information—in order to verify your identity— before accepting requests to make changes to the account. We take these steps to ensure that only you or a household member who knows your Account Information will be able to access or change your Subscriber Information.

TiVo uses industry-standard methods such as encryption to secure the communication of viewing information from your DVR to TiVo. In addition, TiVo uses industry-standard methods of securing its databases of Subscriber Information, including the use of firewalls. Except as provided elsewhere in this Privacy Policy, TiVo limits access to Subscriber Information databases to those persons in the TiVo organization who have a business need for such access, including servicing your account, informing you of service news and special TiVo offers, or aggregating Account Information or Anonymous Viewing Information for the purpose of conducting research, and targeting new subscribers. However, you should know that no company, including TiVo, can fully eliminate security risks associated with Subscriber Information.

8 General

8.1 Future Features, Services, and Amendments to this Privacy Policy. We may upgrade the TiVo service to provide you with new features on an ongoing basis and plan to continue to do so. We may also make available new services in the future. New services will be governed by the privacy policies of the respective

service provider. To the extent that any new features or services may require amendments to this Privacy Policy to describe the treatment of Subscriber Information, these amendments are effective upon notice to you. In the event that we were to make a substantial and material change to our treatment of Subscriber Information, such as a change in the way that we collect, use, or disclose Personally Identifiable Viewing Information, we will notify you of such planned change and offer you the opportunity to alter your privacy preferences.

8.2 Technical Problems. Even though TiVo has taken significant steps to ensure that your Subscriber Information is never collected, used, or disclosed by TiVo except as set forth by this Privacy Policy, technical mistakes are possible. If such a mistake takes place, we will take commercially reasonable steps to correct it.

8.3 Contact TiVo. Our intention is to be diligent in protecting your privacy by strictly following our Privacy Policy. If you would like to make suggestions or find out more about our privacy practices, please call us at 1-877-367-8486 or send us a letter.

Our mailing address is TiVo Inc., 2160 Gold Street, P.O. Box 2160, Alviso, CA 95002-2160.

8.4 Entire Agreement. The term "including" in this Privacy Policy shall mean "including without limitation." This Privacy Policy supplements and is incorporated into the TiVo Service Agreement. This Privacy Policy constitutes the entire agreement, and replaces and supersedes all prior agreements, between you and TiVo concerning the subject matter discussed in this Privacy Policy. Use of your DVR with TiVo service will signify your acceptance of this Privacy Policy.

▸▸ Digital Video Recorder—TiVo Service Agreement

Welcome to TiVo! Congratulations on your subscription to the TiVo Service. This agreement explains the terms and conditions that will apply to your use of the TiVo Service and constitutes a legally binding agreement between you and TiVo Inc. ("TiVo"). By using the TiVo Service, you agree to all the terms and conditions in this agreement ("Agreement").

▸ The TiVo Service and the Privacy Policy

1. **Terms of Service.** The TiVo logo on your TiVo digital video recorder ("DVR") means that it can receive the TiVo Service offered and provided by TiVo for personal, non-commercial use on a subscription basis. Your activation and continued use of the TiVo Service is subject to the terms and conditions of this Agreement. TiVo may at its discretion change the terms of this Agreement. Such changes shall be effective upon notification by TiVo. We encourage you to check http://www.tivo.com/svc_agreement.asp or call us for a copy of the current Service Agreement. If you are dissatisfied with any changes to this Agreement, you may cancel your subscription as provided in Section 13 ("Termination of Service").
2. **The TiVo Service.** The basic TiVo service consists of program guide information and the following features: (a) Season Pass—automatically finds and records every episode of a series all season long; (b) WishList—finds and records programs that feature your favorite actor, director, team or even topic; (c) Smart Recording—automatically detects program line-up changes for your cable/satellite provider and adjusts recording times so you don't have to worry about the details; (d) TiVo Suggestions—TiVo can be programmed to suggest and auto-record programs that may match your interests; and (e) Parental Controls—Lock channels or set ratings limits based on content. Collectively, these features are referred to as the "Basic TiVo Service." The "TiVo Service" means the Basic TiVo Service, and any additional features and functionality that TiVo may, at its discretion and from time to time offer.
3. **Changes to Your TiVo Service.** TiVo may, at its discretion and from time to time change, add or remove features and functionality of the TiVo Service or the TiVo DVR (when the TiVo DVR accesses TiVo's servers) without notice. If you are dissatisfied with any such changes to the TiVo Service, you may immediately cancel your subscription as provided in Section 13 ("Termination of Service"). TiVo reserves the right to discontinue one, some or all of the features of the TiVo Service you receive at any time in its discretion. TiVo may, at its discretion, discontinue the provision of software updates to certain TiVo DVRs. This means that while other TiVo DVRs may receive continued software updates and functionality, TiVo is not required to provide such updates to your TiVo DVR. Additionally, the TiVo Service may not be the same on each TiVo DVR; a given DVR may support different features and functionality, and TiVo is under no obligation to provide all features and functionality to all TiVo DVRs.
4. **TiVo's Privacy Policy.** You must provide us with accurate and complete information when you activate your TiVo Service. TiVo reserves the right to terminate your account if you give TiVo inaccurate or incomplete information. TiVo respects the privacy of your Subscriber Information (as defined in TiVo's Privacy Policy)

and will not disclose any of your Subscriber Information except as permitted in TiVo's Privacy Policy. A copy of TiVo's Privacy Policy is included in the product manual and the latest version can always be found via our website at *www.tivo.com*. Please read it carefully before using your subscription for the TiVo Service. By using the TiVo Service, you agree to the terms and conditions of our Privacy Policy and affirm that you understand the options TiVo provides you with regard to your Subscriber Information. TiVo will notify you of any substantial and material changes to the Privacy Policy and the latest Privacy Policy can always be accessed through our website at *www.tivo.com*.

5. **We Don't Control the Nature of Television!** The TiVo Service gives you the ability to see and record televised programs over which TiVo exercises no editorial or programming control ("Third Party Content"). You understand that (a) TiVo does not guarantee the access to or recording of any particular program, (b) programming is not under TiVo's control, (c) cable/satellite providers may make program line-up changes too quickly for your TiVo DVR to adjust recording times, (c) TiVo is not responsible for and has no editorial control over any Third Party Content, and (d) TiVo has no control over the distribution of programs. You also understand that the Third Party Content is the copyrighted material of the third party that supplies it, is protected by copyright and other applicable laws, and may not be reproduced, published, broadcast, rewritten, or redistributed without the written permission of the third party that supplied it, except to the extent allowed under the "fair use" provisions of the U.S. copyright laws or comparable provisions of foreign laws. You agree that TiVo will have no liability to you, or anyone else who uses your account, with regard to any Third Party Content.

▶ Subscribing to and Using the TiVo Service

6. **Eligible Subscribers.** You must be at least 18 years of age to assume the responsibilities of this Agreement. Minors may use the TiVo Service only if one of their parents or legal guardians assumes the responsibilities of this Agreement and thereby assumes full responsibility for the minor's use of the TiVo Service.
7. **Subscription Fees.** You agree to pay your subscription fee in advance. Your subscription fee will cover the Basic TiVo Service received via a product authorized by TiVo to enable the TiVo Service. You have a choice of subscription options that may change over time. You may switch options at the end of each period. If for any reason you need to reactivate your subscription, you will be charged a reactivation fee. If you are signing up for Basic TiVo Service under a promotional subscription fee, some additional restrictions may apply. Whatever your subscription option, your subscription fee does not include any services, features or functionality other than the Basic TiVo Service.
8. **Telephone Access and Possible Charges.** The TiVo Service is accessed through a standard telephone line and is available as a local call in most areas. In some areas, local and long-distance toll charges may apply. You are responsible for any telephone charges incurred as a result of using or accessing the TiVo Service and acknowledge and agree that you shall be solely responsible for all disputes with any telephone company related to the same.
9. **Payment Authorization.** If you choose a subscription option with recurring payments, you agree that TiVo may automatically charge the subscription fee to your credit or charge card at the beginning of each period. Your TiVo Service access will not be established until

TiVo has verified that the credit card information you provide us for payment is accurate and that your credit card is in good standing. TiVo may, as necessary, extend the expiration date of your credit card in order to ensure continued service. TiVo may, at its discretion, change the TiVo Service fees from time to time, and charge fees (which TiVo may also change) for features and functionalities that are not a part of the Basic TiVo Service. TiVo will notify you 30 days in advance of any fee changes or new fees; you may obtain the fees currently in effect at any time by contacting TiVo Customer Service toll-free at 1-877-367-8486. TiVo reserves the right to suspend or terminate your TiVo Service without notice upon rejection of any credit card charges or if your card issuer (or its agent or affiliate) seeks return of payments previously made to TiVo when TiVo believes you are liable for the charges. You agree to pay a late charge on all amounts due which remain unpaid for 30 days. The late charge will equal 1.5% of the past due amount, or the highest rate allowed by law, per month until paid. Such rights are in addition to and not in lieu of any other legal right or remedies available to TiVo. TiVo reserves the right to refer your account to a third party for collection in the event of an ongoing default.

10. **Using the TiVo Service.** You may access and use the TiVo Service only with a product authorized to receive the TiVo Service and you agree not to tamper with or otherwise modify the TiVo DVR. The TiVo Service is provided for your personal use and may not be resold, in whole or in part, or otherwise commercially exploited. Except as expressly provided in this Agreement, you may not transfer the TiVo Service. By using the TiVo Service, you agree to receive all software updates and upgrades that TiVo sends to your TiVo DVR. If your TiVo DVR accesses the TiVo Service (regardless of your payment or subscription status), you acknowledge and agree that you are a user of the TiVo Service and are bound by the terms of this Agreement.
11. **Advertising and Promotions.** The TiVo Service is in part advertiser supported. The hard disk drive of your DVR contains reserved space in addition to the advertised recording capacity. TiVo reserves the right to send content (including advertising and promotional material) to such reserved portions of your DVR's hard disk drive as part of the TiVo service. In order to send such content, you agree that TiVo may tune your TiVo DVR to a particular channel at a particular time.
12. **Definition of Product Lifetime Subscription.** A "Product Lifetime Subscription" to the Basic TiVo Service covers the life of the DVR you buy - not the life of the subscriber. The Product Lifetime Subscription accompanies the product in case of ownership transfer. The subscription remains in effect if the DVR needs to be repaired or replaced due to a malfunction (see manufacturer or retailer warranty details) or even if you upgrade your DVR to increase storage capacity (though such upgrades, if not performed by a TiVo-authorized third party, will void the warranty on your DVR and constitute a breach of this Agreement). Because a Product Lifetime Subscription is linked to a particular DVR, it cannot be transferred to any other DVR (unless the DVR is replaced due to a malfunction covered by the manufacturer's or retailers warranty). Each DVR purchased requires its own TiVo Service subscription and activation. Of course, hardware products don't last forever and their lifespan will vary. TiVo makes no warranties or representations as to the expected lifetime of the DVR (aside from the manufacturer's or retailer's warranty).

13. **Termination of Service.** You may terminate your account, this Agreement, and your right to use the TiVo Service, at any time and for any reason or no reason, by contacting TiVo Customer Service toll-free at 1-877-367-8486. Notwithstanding anything to the contrary in this Agreement, TiVo retains the absolute right to immediately suspend or terminate your account, and terminate this Agreement, if the charges to your credit card for the fees described in Section 7 ("Subscription Fees") and Section 9 ("Payment Authorization") are refused for any reason, if you breach any provision in this Agreement, if you misuse the TiVo Service, and/or if you alter the DVR or use the TiVo Service in such a manner as to infringe upon the intellectual property rights of TiVo or any third party. In addition, TiVo reserves the right to terminate your account and this Agreement for any other reason if TiVo gives you at least 30 days advance notice. Upon any such termination of your account, you will remain obligated to pay all outstanding fees and charges relating to your use of the TiVo Service before termination. Unused subscription fees are nonrefundable.

▶ Ownership, Open Source Software, Disclaimers and Liability Limitations

14. **Title to Software and Intellectual Property.** You may need to use certain software programs to use or have full access to certain features of the TiVo Service. You received certain software with the purchase of the TiVo DVR and other software programs may be provided to you by TiVo from time to time, which you are obligated to accept. Your use of such software is subject to the terms of this Agreement. TiVo retains title to and ownership of all the TiVo software and certain intellectual property rights in the TiVo DVR. TiVo also retains ownership of all TiVo copyrights and trademarks. In the case of third party software delivered by TiVo to the TiVo DVR, the applicable third party retains title to and ownership of its software, copyrights and trademarks. Any attempt to disassemble, decompile, create derivative works of, reverse engineer, modify, sublicense, distribute or use for other purposes either the DVR or software of this system is strictly prohibited, except as expressly set forth in Section 15 ("Open Source Software").

15. **Open Source Software.** Certain components of the TiVo software are subject to the GNU General Public License or other so-called open source licenses ("Open-Source Software"). Open Source Software is not subject to the restrictions in the last sentence of Section 14 ("Title to Software and Intellectual Property"), and is subject to the GNU General Public License ("GPL") or other license terms, as applicable. In compliance with the terms of the GPL, TiVo makes its modifications to Open Source Software that TiVo uses, modifies and distributes pursuant to the GPL available to the public in source code form at *www.tivo.com/linux*. You are free to use, modify and distribute Open Source Software that is subject to the GPL so long as you comply with the terms of the GPL (available in your user documentation or at *www.gnu.org/copyleft/gpl.html*).

16. **Indemnity.** YOU AGREE TO DEFEND, INDEMNIFY AND HOLD HARMLESS TIVO FROM AND AGAINST ANY AND ALL CLAIMS, PROCEEDINGS, INJURIES, LIABILITIES, LOSSES, COSTS AND EXPENSES (INCLUDING REASONABLE ATTORNEYS' FEES), INCLUDING, BUT NOT LIMITED TO, CLAIMS ALLEGING NEGLIGENCE, COPYRIGHT INFRINGEMENT AND/OR TRADEMARK INFRINGEMENT AGAINST TIVO OR THE TIVO SERVICE, RELATING TO OR ARISING OUT OF YOUR BREACH OF ANY

TERM OF THIS AGREEMENT, YOUR MISUSE OF THE TIVO SERVICE, OR YOUR UNAUTHORIZED MODIFICATION OR ALTERATION OF THE DVR OR RELATED SOFTWARE (OTHER THAN AS EXPRESSLY SET FORTH IN SECTION 15 ("OPEN SOURCE SOFTWARE")).

17. **Warranty Disclaimer.** YOU UNDERSTAND AND AGREE THAT THE TIVO SERVICE IS PROVIDED ON AN "AS IS" AND "AS AVAILABLE" BASIS. TIVO MAKES NO WARRANTY THAT THE TIVO SERVICE WILL MEET YOUR REQUIREMENTS OR THAT USE OF THE TIVO SERVICE WILL BE UNINTERRUPTED, TIMELY, SECURE, OR ERROR-FREE; NOR DOES TIVO MAKE ANY WARRANTY AS TO THE ACCURACY OR RELIABILITY OF ANY INFORMATION OBTAINED THROUGH THE TIVO SERVICE (INCLUDING THIRD PARTY CONTENT), THAT ANY DEFECTS IN THE TIVO SERVICE WILL BE CORRECTED OR THAT THE DVR OR TIVO SERVICE WILL BE COMPATIBLE WITH ANY OTHER SPECIFIC HARDWARE OR SERVICE. TIVO AND ITS SUPPLIERS DISCLAIM ALL WARRANTIES OF ANY KIND, WHETHER EXPRESS, IMPLIED, OR STATUTORY, REGARDING THE TIVO SERVICE OR TIVO SOFTWARE, INCLUDING ANY IMPLIED WARRANTY OF TITLE, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT OF THIRD PARTY RIGHTS. Because some jurisdictions do not permit the exclusion of implied warranties, this disclaimer may not apply to you.

18. **Limitations of TiVo's Liability.** IN NO EVENT WILL TIVO OR ITS SUPPLIERS BE LIABLE TO YOU OR ANY THIRD PARTY FOR ANY LOST PROFITS, USE OF SUBSCRIBER INFORMATION, LOSS OF DATA, BUSINESS INTERRUPTION, OR OTHER INDIRECT, CONSEQUENTIAL, SPECIAL, OR INCIDENTAL DAMAGES OF ANY NATURE ARISING FROM OR RELATING TO YOUR USE OF THE TIVO SERVICE OR USE OF THE TIVO SERVICE THROUGH YOUR ACCOUNT BY ANYONE ELSE, EVEN IF TIVO HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO CASE WILL TIVO'S TOTAL CUMULATIVE LIABILITY TO YOU AND ANYONE WHO USES THE TIVO SERVICE THROUGH YOUR ACCOUNT, FOR ANY AND ALL CLAIMS UNDER ANY THEORY OF LAW, EXCEED THE AGGREGATE AMOUNT YOU PAID TO TIVO IN THE PRECEDING TWELVE MONTHS. YOU UNDERSTAND THAT THESE LIMITATIONS OF TIVO'S AND TIVO'S SUPPLIERS' LIABILITY ARE A FUNDAMENTAL PART OF THIS AGREEMENT. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. Additionally, this provision is not intended to limit TiVo's liability in the event of TiVo's willful or intentional misconduct. Moreover, if TiVo mistakenly or wrongfully overcharges your account, this section does not limit TiVo's obligation to refund such mistakenly or wrongfully overcharged amounts.

▶ Legal Stuff

19. **Miscellaneous.** This Agreement will be governed by the laws of the State of California as such laws apply to agreements between California residents performed entirely within California. The United Nations Convention on Contracts for the International Sale of Goods does not apply to this Agreement. If any provision of this Agreement is invalid or unenforceable under applicable law, such provision will

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APPENDIX A

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Linux Source Notice

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Version 2, June 1991

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Ty Coon, President of Vice

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TiVo is dedicated to providing you with quality support and customer service. If you have questions or difficulties, we would like to hear from you.

Troubleshooting

Check the Troubleshooting chapter of this document and of the *Installation Guide* that came with your Digital Video Recorder.

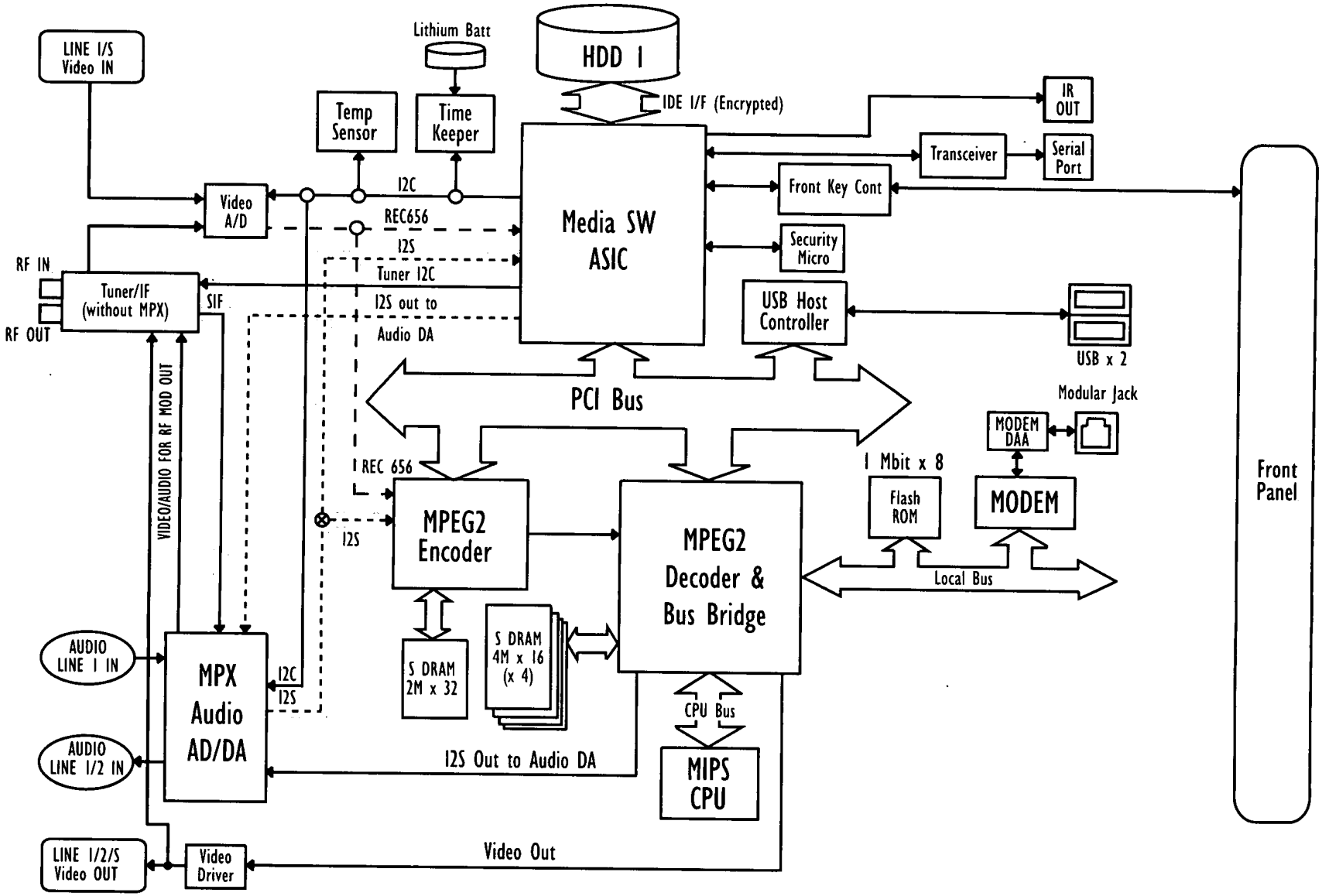
Online Customer Support

Check the TiVo website at *www.tivo.com/support*. It contains Online Customer Support on a number of topics, including hookup and setup. You'll also find the latest information about TiVo there, including Service Updates, the TiVo Service Agreement, and the TiVo Privacy Policy.

Contact Customer Support

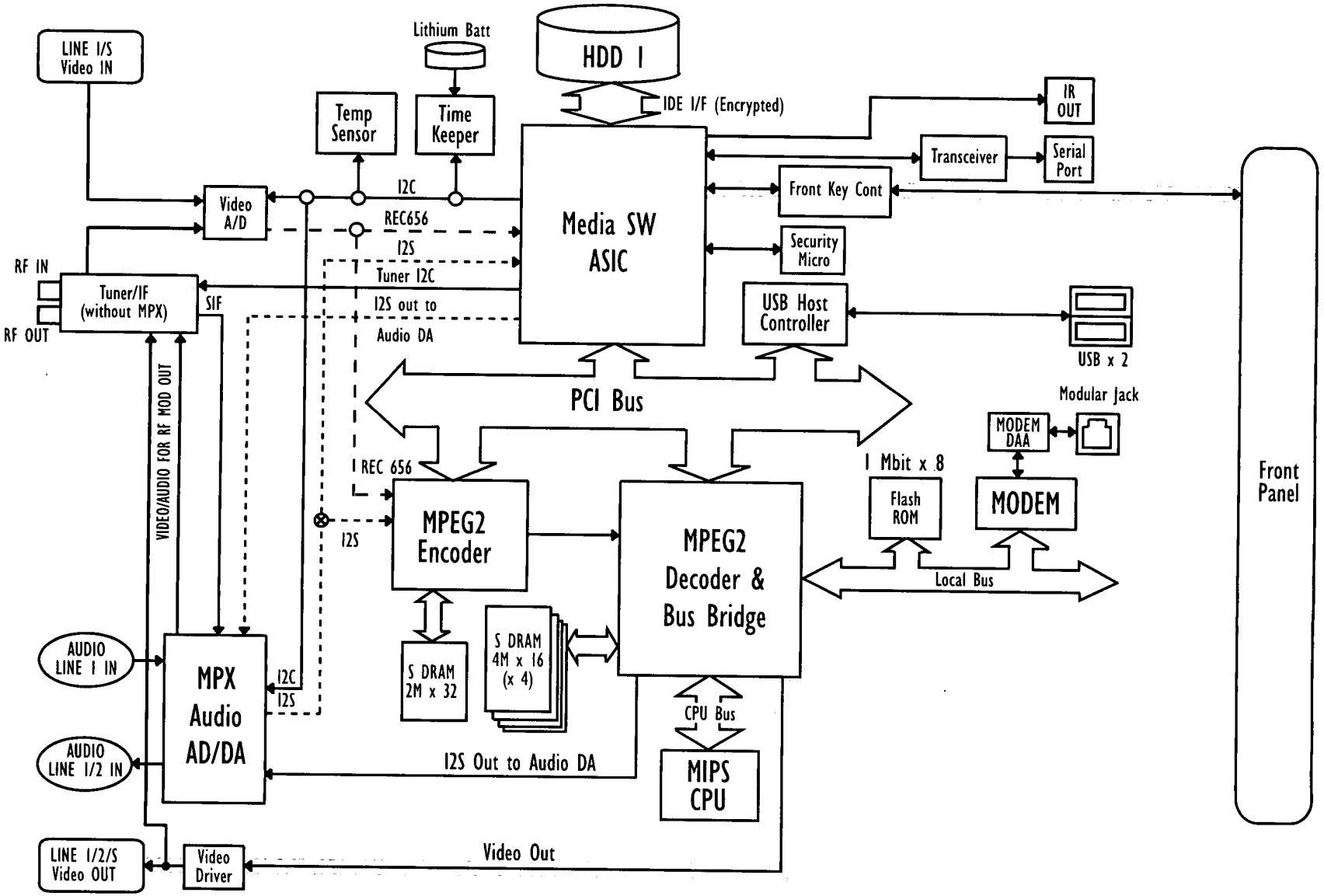
If you haven't found an answer in the Troubleshooting chapter of this document or in the Online Customer Support section of the TiVo website, you can find complete Customer Support contact information in the *Installation Guide*.

2-3. BLOCK DIAGRAM



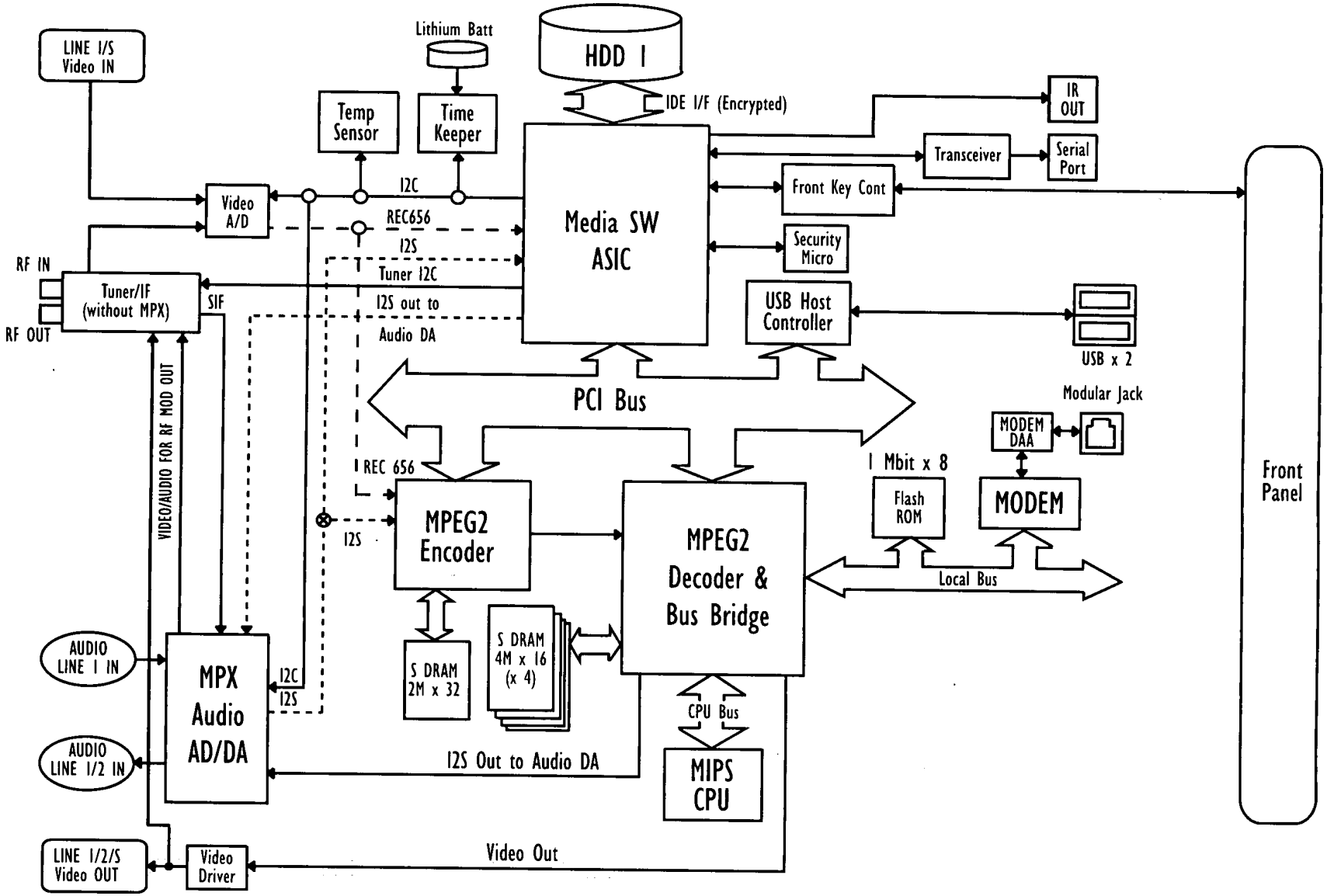
"a memory coupled to the tuner for storing data in the received broadcast signal in a database"

2-3. BLOCK DIAGRAM



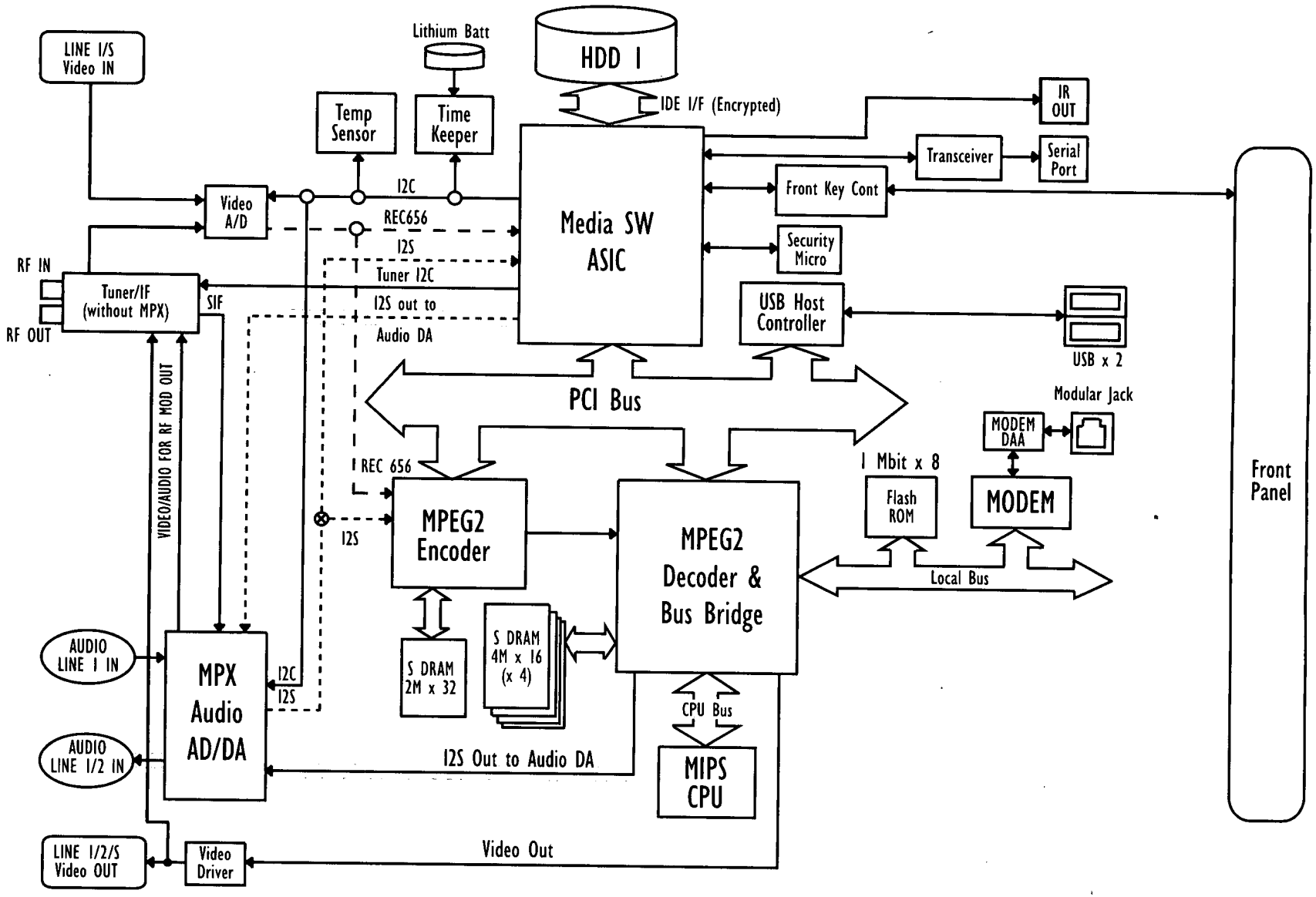
"a user interface for providing a set of menus describing the database, and for accepting selections from the set of menus"

2-3. BLOCK DIAGRAM



"a controller coupled to the memory and the user interface for selecting data from the database in response to the accepted selections and providing the selected data in a digital form"

2-3. BLOCK DIAGRAM



"a speech producing sub-system coupled to the controller and the memory for converting the selected data from digital form to an analog signal"

FILED

JUN 15 2004

RICHARD W. WIEKING
CLERK, U.S. DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

United States District Court
For the Northern District of California

IN THE UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

COMMAND AUDIO CORPORATION,

Plaintiff,

v.

SONY ELECTRONICS, INC.,

Defendant.

/

No. C 02-0599 MJJ

ORDER GRANTING IN PART AND DENYING IN PART COMMAND AUDIO'S MOTION FOR PARTIAL SUMMARY JUDGMENT AND DENYING SONY'S MOTION FOR SUMMARY JUDGMENT

Before the Court is a patent infringement action by Command Audio Corporation (Command Audio) against Sony Electronics, Inc. (Sony). Command Audio moves for partial summary judgment, pursuant to Federal Rule of Civil Procedure 56, that Sony willfully infringed the patents-at-issue. Sony moves for summary judgment that those patents are invalid for anticipation. Based on the submissions, arguments, and records herein, Command Audio's motion is GRANTED IN PART AND DENIED IN PART and Sony's motion is DENIED.

I. BACKGROUND

A. Tydeman *and the Patents-At-Issue*

In 1982, John Tydeman co-authored *Teletext and Videotex in the United States* (*Tydeman*), describing the current state and the future of teletext and videotex technology. Thirteen years later, on April 11, 1995, the Patent and Trademark Office (PTO) issued John O. Ryan (Ryan) United States Patent No. 5,406,626, titled "Radio Receiver for Information

Dissemination Using Subcarrier." Although the '626 is not at issue here, Command Audio has asserted its continuation-in-part, United States Patent No. 5,590,195, titled "Information Dissemination Using Various Transmission Modes" and issued on December 31, 1996. After the PTO twice corrected the '195, claim 1 teaches:

> A receiver to receive, store and playback data in a transmitted signal comprising:
>
> a tuner for providing the data from the transmitted signal;
>
> a memory coupled to the tuner for storing the provided data as a database;
>
> a user interface for providing a set of menus describing the stored database, and for accepting selections from the set of menus;
>
> a controller coupled to the memory and the interface for selecting for playback the stored data from the database in response to the accepted selections and providing the selected data in a digital form; and
>
> a speech producing sub-system coupled to the memory for converting the selected data to an analog signal representing an original audio signal.

Claims 3, 5, 9, 14, 16, 17, and 30 respectively teach: "[t]he device of claim 1, wherein the tuner provides data from a television carrier"; "[t]he device of claim 3, wherein the tuner provides data from a Separate Audio Programming channel [(SAP)] of the television carrier"; "[t]he device of claim 1, wherein the received data is audio data that has been converted from analog form to digital form"; "[t]he device of claim 1, wherein the extracted data is in digital form, has been encrypted and compressed, and further comprising a decryptor for providing conditional access and decrypting the provided data"; "[t]he device of claim 14[,] wherein the decryptor is enabled by a key received by the tuner"; "[t]he device of claim 14, wherein the decryptor is enabled by a key device connected to the decryptor"; and "[t]he device of claim 1, wherein a speed of transmission of said data is variable."

Command Audio also asserts a continuation of a continuation of a division of the '195, United States Patent No. 6,330,334, titled "Method and System for Information Dissemination Using Television Signals" and issued on December 11, 2001. Claim 30 of the '334 teaches:

> A receiver comprising:
>
> a television tuner;
>
> a controller coupled to the television tuner and which provides audio from a signal received at the television tuner, wherein the audio is carried in an SAP

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For the Northern District of California

associated with television signals received at the tuner;

a memory coupled to the controller and which stores the audio;

a user interface coupled to the controller and which provides a menu; and

an audio output device coupled to the controller and which outputs the stored audio in response to a selection from the menu, wherein the stored audio has a designation associated with the menu.

Claims 31 and 34 respectively teach the receiver of claim 30 "wherein the audio is digitalized" and "wherein the menu is included in a set of hierarchical menus." Claim 40 teaches:

A receiver comprising:

a television tuner;

a controller coupled to the television tuner and which provides audio from a signal received at the television tuner;

a memory coupled to the controller and which stores the audio, wherein the audio is stored as a database;

a user interface coupled to the controller and which provides a menu; and

an audio output device coupled to the controller and which outputs the stored audio in response to a selection from the menu, wherein the stored audio has a designation associated with the menu.

Claim 43 teaches "[t]he receiver of claim 40, wherein the menu is included in a set of hierarchical menus." Claim 44 teaches:

A receiver comprising:

a television tuner;

a controller coupled to the television tuner and which provides audio from a signal received at the television tuner, wherein the audio is carried in an audio or video portion of television signals received at the tuner;

a memory coupled to the controller and which stores the audio;

a user interface coupled to the controller and which provides a menu; and

an audio output device coupled to the controller and which outputs the stored audio in response to a selection from the menu, wherein the stored audio has a designation associated with the menu.

And, claims 45, 47, and 48 respectively teach the receiver of claim 44, "wherein the audio is digitized," "wherein the audio is stored as a database," and "wherein the menu is included in a set of hierarchical menus."

United States District Court
For the Northern District of California

Ryan did not list *Tydeman* as a reference in any information disclosure statement filed with the PTO during the prosecution of the'626, the '195, or the '334 and the patent examiner did not identify or consider *Tydeman* as prior art to those applications.

B. Sony's Products and the Instant Litigation

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II. LEGAL STANDARD

The Court must render summary judgment "forthwith if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." Fed. R. Civ. P. 56(c). A fact is material if it is relevant to an element of a claim or defense and the existence or the nonexistence of that fact might affect the outcome of the suit, as determined by the underlying substantive law. *Anderson v. Liberty*

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Lobby, Inc., 477 U.S. 242, 248 (1986). In this determination, the Court applies Federal Circuit law to patent issues and Ninth Circuit law to all other matters. *Midwest Indus., Inc. v. Karavan Trailers, Inc.*, 175 F.3d 1356, 1359 (Fed. Cir. 1999).

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III. ANALYSIS

A. Infringement

Command Audio is entitled to summary judgment that the SVR-2000 and the SVR-3000

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infringe claims 30 and 44 of the '334, that the SAT-T60 infringes claims 44 and 45 of the '334, and that the VAIOs infringe claims 30, 34, 44, and 48 of the '334; it, however, is not entitled to summary judgment that the SVR-2000 and the SVR-3000 infringe claim 34 of the '334 or that the SVR-2000, the SVR-3000, and the SAT-T60 infringe claim 48 of the '334. Patent infringement, generally, is the making, the using, the offering to sell, or the selling of any patented invention within the United States and without authority. 35 U.S.C. § 271(a). Literal infringement analysis requires the Court to construe the scope and meaning of the claims-at-issue and, on summary judgment, to compare the construed claims to the accused device, asking whether that device contains every claim limitation. *Wenger*, 239 F.3d at 1231.

1. Claim Construction

The parties contest the scope and meaning of the term "set of hierarchical menus," as used in claims 34 and 48 of the '334. To construe a term, the Court considers the claim language, the specification, and the prosecution history. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (*en banc*). The analytical focus begins and remains centered on the claim language with a "heavy presumption" in favor of the construction understood by persons skilled in the relevant art. *Texas Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1201-02 (Fed. Cir. 2002). The Court then reviews the specification and the prosecution history to determine whether either rebuts this presumption. *Id.* at 1204; *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996); *see also Markman*, 52 F.3d at 979-80 (holding that the specification and prosecution history cannot enlarge, diminish, or vary claim limitations).

Command Audio argues that a menu structure is "hierarchical" as long as it has submenus, citing *The Microsoft Press Computer Dictionary* (2d ed. 1994) ("A database in which records are grouped in such a way that their relationships form a branching, treelike structure"), *The American Heritage College Dictionary* (3d ed. 1997) ("A series in which each element is graded or ranked"), *The Random House Dictionary* (2d ed. 1987) ("any system of persons or things ranked above one another"), *Webster's Ninth New College Dictionary* (9th ed. 1986) ("a graded or ranked series"), and *Tydeman* ("A fundamental design characteristic of all first-generation teletext and videotex systems is the adherence to hierarchical menu searches, i.e.,

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tree-structured databases."). Sony, conversely, argues that "hierarchical" excludes structures wherein a component has more than one superordinate component, citing *The New IEEE Standard Dictionary of Electrical and Electronics Terms* (6th ed. 1996) ("A structure in which components are ranked into levels of subordination; each component has zero, one or more subordinates; and no component has more than one superordinate component."). Sony also claims that the addition of the term "hierarchical" during the patent prosecution to avoid United States Patent No. 5,131,020, titled "Method of and System for Providing Continually Updated Traffic or Other Information to Telephonically and Other Communications-Linked Customers" and issued on July 14, 1992 ('020), precludes Command Audio's preferred construction.

The Court hereby adopts Sony's definition as the ordinary meaning of the term "hierarchical." The Court, preliminarily, finds the reference to the '020 ambiguous. Although the term "hierarchical" was added during prosecution to avoid prior art, the prosecution history does not clarify whether the patent examiner was rejecting (or even addressing) structures wherein one component has more than one superordinate. The definition from the *IEEE Dictionary*, nevertheless, controls because the patents-at-issue reside in the field of electrical engineering. *See Vanderlande Indus. Nederland BV v. International Trade Comm'n*, 366 F.3d 1311, 1321 (Fed. Cir. 2004) ("a general-usage dictionary cannot overcome credible art-specific evidence of the meaning or lack of meaning of a claim term."). And, *Tydeman* cannot alter this ordinary meaning. *See Merck & Co., Inc. v. Teva Pharms USA, Inc.*, 347 F.3d 1367, 1372 (Fed. Cir. 2003) ("It is well established that evidence extrinsic to the patent documents cannot change the meaning of a term as used in the claim from the meaning with which it is used in the specification."). The Court, thus, construes the term "a set of hierarchical menus" to mean a set of menus in which components are ranked into levels of subordination, each component has zero, one or more subordinates, and no component has more than one superordinate component.

2. Claim-Device Comparison

Command Audio moves for summary judgment that the SVR-2000, the SVR-3000, and the VAIOs infringe claims 30, 34, 44, and 48 of the '334 and that the SAT-T60 infringes claims 44, 45, and 48 of the '334. In its responses to Command Audio's requests for admissions, in its

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papers regarding this motion, and in its answers to this Court's questions at oral argument, Sony admitted that the SVR-2000, the SVR-3000, and the VAIOs infringe claim 30, that the VAIOs infringe claim 34, that the SVR-2000, the SVR-3000, the SAT-T60, and the VAIOs infringe claim 44, that the SAT-T60 infringes claim 45, and that the VAIOs infringe claim 48.

The Court, however, finds that there are genuine issues of material fact whether the SVR-2000 and the SVR-3000 infringe claim 34 and whether the SVR-2000, the SVR-3000, and the SAT-T60 infringe claim 48. Those claims require "a set of hierarchical menus." Command Audio does not contest that a user can directly access the SVR-2000, the SVR-3000, and the SAT-T60's "now playing list menu" and "individual program menus" from numerous locations, meaning that they have more than one superordinate. These menu sets, thus, are not hierarchical, as construed by the Court. The parties, in fact, agreed at the hearing that summary judgment would be improper if this Court adopted the *IEEE Dictionary*'s definition of the term "hierarchical." Perhaps, Command Audio will show the fact-finder at trial that these menus are hierarchical. At this point, though, there are genuine issues of material fact whether the SVR-2000, the SVR-3000, and the SAT-T60 use "a set of hierarchical menus." The Court grants Command Audio's motion that the SVR-2000, the SVR-3000, and the VAIOs infringe claim 30, that the VAIOs infringe claim 34, that the SVR-2000, the SVR-3000, the SAT-T60, and the VAIOs infringe claim 44, that the SAT-T60 infringes claim 45, and that the VAIOs infringe claim 48, but denies Command Audio's motion that the SVR-2000 and the SVR-3000 infringe claim 34 or that the SVR-2000, the SVR-3000, and the SAT-T60 infringe claim 48.

The Court additionally finds that there are genuine issues of material fact whether Sony's infringement was willful. A federal court may increase the damages awarded to the patentee (up to treble) for willful infringement. *See* 35 U.S.C. § 284. Infringement, however, is not willful if "the infringer, acting in good faith and upon due inquiry, had sound reason to believe that it had the right to act in the manner that was found to be infringing." *SRI Int'l., Inc. v. Advanced Tech. Labs., Inc.*, 127 F.3d 1462, 1464-65 (Fed. Cir. 1997). A willfulness determination specifically requires an examination of the totality of the circumstances, including: whether the infringer deliberately copied the ideas of another; when the infringer knew of the other's patent

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protection; whether the infringer investigated the scope of the patent and formed a good-faith belief that it was invalid or that it was not infringed; if the infringer had knowledge of the patent rights, did he exercise due care to determine whether or not his conduct would result in an infringement; and, the infringer's behavior as a party to the litigation. *Bott v. Four Star Corp.*, 807 F.2d 1567, 1572 (Fed. Cir. 1986), *overruled on other grounds by A.C. Aukerman Co. v. R.L. Chaides Const. Co.*, 960 F.2d 1020, 1038-1039 (Fed. Cir. 1992). "[W]illful action is quintessentially a question of fact, for it depends on findings of culpable intent and deliberate or negligent wrongdoing." *Biotec Biologische Naturverpackungen GmbH & Co. KG v. Biocorp, Inc.*, 249 F.3d 1341, 1356 (Fed. Cir. 2001) (quotation marks omitted).

Command Audio has not adduced evidence that Sony deliberately copied their ideas or that Sony has behaved in bad faith as a party to this litigation. Command Audio's willfulness allegations primarily are based on its notice (and subsequent communications) to Sony that the PTO issued the '626, the '195, and the '334. Command Audio fails to show any lack of care by Sony after that notice, beyond continuing to sell its products. On this record, the mere act of continuing to sell products is not, by itself, *per se* careless. And, upon close review and consideration, Sony's advice of counsel is not incompetent as a matter of law. *See Read Corp. v. Portec, Inc.*, 970 F.2d 816, 830 (Fed. Cir. 1992) ("That counsel's opinion turned out to be contrary to our judgment with respect to the [asserted] patent does not make his advice regarding that patent incompetent."); *Ortho Pharm.*, 959 F.2d at 944 (Fed. Cir. 1992) ("While an opinion of counsel letter is an important factor in determining the willfulness of infringement, its importance does not depend upon its legal correctness."). The fact-finder, nevertheless, certainly will be interested in Sony's delay obtaining that advice. *See Ortho Pharm. Corp. v. Smith*, 959 F.2d 936, 944 (Fed. Cir. 1992). But, this delay -- in and of itself -- is insufficient to show willfulness as a matter of law. *See Biotec*, 249 F.3d at 1356. The fact-finder, further, likely will weigh TiVo's involvement and possible responsibility and the failure of Command Audio to notify Sony of the PTO's corrections to the '195. In sum, whether Sony's conduct, or lack thereof, was reasonable or whether a prudent person would have acted sooner or differently is a question for the fact-finder at trial. The Court, thus, denies Command Audio's motion for

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summary judgment that Sony's infringement was willful.

B. Anticipation

The Court finds that there are genuine issues of material fact whether *Tydeman* anticipates the claims-at-issue. Although "[a] patent shall be presumed valid," 35 U.S.C. § 282, a patent claim is invalid if the alleged infringer demonstrates by clear and convincing evidence that prior art anticipated the patented invention. *Schumer v. Laboratory Computer Sys., Inc.*, 308 F.3d 1304, 1315 (Fed. Cir. 2002). Anticipation means that "the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent." 35 U.S.C. § 102(a). To anticipate, a reference "must disclose every element of the challenged claim and enable one skilled in the art to make the anticipating subject matter." *PPG Indus., Inc. v. Guardian Indus. Corp.*, 75 F.3d 1558, 1566 (Fed. Cir. 1996). "Moreover, a prior art reference may anticipate without disclosing a feature of the claimed invention if that missing characteristic is necessarily present, or inherent, in the single anticipating reference." *Schering Corp. v. Geneva Pharm.*, 339 F.3d 1373, 1377 (Fed. Cir. 2003). Otherwise stated, "that which infringes, if later, would anticipate, if earlier." *Knapp v. Morss*, 150 U.S. 221, 228 (1893). A district court sometimes may grant summary judgment on anticipation, *Beckson Marine, Inc. v. NFM, Inc.*, 292 F.3d 718, 723 (Fed. Cir. 2002), but the defense often raises complex fact issues that render summary judgment inappropriate. *Marion Merrell Dow, Inc. v. Geneva Pharms., Inc.*, 877 F. Supp. 531, 534 (D. Colo. 1994); *see also Gillette Co. v. Warner-Lambert Co.*, 690 F. Supp. 115, 116 (D. Mass. 1988) (citation omitted) ("To begin with, summary judgment is usually inappropriate in patent infringement cases, which are usually dominated by factual issues. This is especially true when the issue of anticipation has been raised, since anticipation is a factual issue.").

The inventor of the '195 and the '334 acknowledged that "the tuner wasn't new.... The concept of memory wasn't new. The concept of a menu or database wasn't new. It's the specific combination of the elements to provide the specific function that I believe to be new and which is the basis of these patents. . . ." Sony presents evidence and expert declarations that some or all of the elements of the claims-at-issue can be found or are inherent in *Tydeman*: "This

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discussion culminates in a description of what Tydeman labels an 'enhanced information retrieval terminal' (graphically depicted in Figure 9.3), which fully embodies the limitation of the asserted claims." Command Audio presents evidence and expert declarations to the opposite: "Nowhere in Tydeman is a device described which one skilled in the art would understand to include the specific combination of elements recited in the asserted claims. Tydeman provides only generalized lists of features that do not teach one skilled in the art to combine all the elements of any of the asserted patent claims." As demonstrated by this conflict, there are genuine issues of material fact whether *Tydeman* anticipates the asserted claims of the '195 and the '334. *Tydeman*, for example, arguably may teach (either directly or inherently) the claimed receivers, but summary judgment is improper on this record because the evidence is such that a reasonable jury could return a verdict for Command Audio that *Tydeman* does not anticipate the inventions disclosed by the '195 and the '334, particularly their specific use of hierarchical databases, SAP, hierarchical menus, digitization, and variable transmission speeds. The Court, thus, denies Sony's motion for summary judgment that *Tydeman* anticipates the claims-at-issue.

IV. CONCLUSION

For the reasons set forth above, Command Audio's motion for partial summary judgment is GRANTED IN PART AND DENIED IN PART and Sony's motion for summary judgment is DENIED. The Court finds, as a matter of law, that the SVR-2000 and the SVR-3000 infringe claims 30 and 44 of the '334, that the SAT-T60 infringes claims 44 and 45 of the '334, and that the VAIOs infringe claims 30, 34, 44, and 48 of the '334.

IT IS SO ORDERED.

Dated: 6/10/2004

MARTIN J. JENKINS
UNITED STATES DISTRICT JUDGE

United States District Court
For the Northern District of California

UNITED STATES DISTRICT COURT

FOR THE

NORTHERN DISTRICT OF CALIFORNIA

Command Audio Corporation,

Plaintiff,

v.

Sony Electronics, Inc.,

Defendant.
_____/

Case Number: CV02-0599 MJJ

CERTIFICATE OF SERVICE

I, the undersigned, hereby certify that I am an employee in the Office of the Clerk, U.S. District Court, Northern District of California.

That on June 15, 2004, I SERVED a true and correct copy(ies) of the attached, by placing said copy(ies) in a postage paid envelope addressed to the person(s) hereinafter listed, by depositing said envelope in the U.S. Mail, or by placing said copy(ies) into an inter-office delivery receptacle located in the Clerk's office.

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Dated: June 15, 2004

Richard W. Wieking, Clerk

By: Monica Tutson, Deputy Clerk

FILED

JUN 15 2004

RICHARD W. WIEKING
CLERK, U.S. DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

United States District Court
For the Northern District of California

IN THE UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

COMMAND AUDIO CORPORATION,

Plaintiff,

v.

SONY ELECTRONICS, INC.,

Defendant.

/

No. C 02-0599 MJJ

ORDER GRANTING IN PART AND DENYING IN PART COMMAND AUDIO'S MOTION FOR PARTIAL SUMMARY JUDGMENT AND DENYING SONY'S MOTION FOR SUMMARY JUDGMENT

Before the Court is a patent infringement action by Command Audio Corporation (Command Audio) against Sony Electronics, Inc. (Sony). Command Audio moves for partial summary judgment, pursuant to Federal Rule of Civil Procedure 56, that Sony willfully infringed the patents-at-issue. Sony moves for summary judgment that those patents are invalid for anticipation. Based on the submissions, arguments, and records herein, Command Audio's motion is GRANTED IN PART AND DENIED IN PART and Sony's motion is DENIED.

I. BACKGROUND

A. Tydeman *and the Patents-At-Issue*

In 1982, John Tydeman co-authored *Teletext and Videotex in the United States* (*Tydeman*), describing the current state and the future of teletext and videotex technology. Thirteen years later, on April 11, 1995, the Patent and Trademark Office (PTO) issued John O. Ryan (Ryan) United States Patent No. 5,406,626, titled "Radio Receiver for Information

Dissemination Using Subcarrier." Although the '626 is not at issue here, Command Audio has asserted its continuation-in-part, United States Patent No. 5,590,195, titled "Information Dissemination Using Various Transmission Modes" and issued on December 31, 1996. After the PTO twice corrected the '195, claim 1 teaches:

> A receiver to receive, store and playback data in a transmitted signal comprising:
>
> a tuner for providing the data from the transmitted signal;
>
> a memory coupled to the tuner for storing the provided data as a database;
>
> a user interface for providing a set of menus describing the stored database, and for accepting selections from the set of menus;
>
> a controller coupled to the memory and the interface for selecting for playback the stored data from the database in response to the accepted selections and providing the selected data in a digital form; and
>
> a speech producing sub-system coupled to the memory for converting the selected data to an analog signal representing an original audio signal.

Claims 3, 5, 9, 14, 16, 17, and 30 respectively teach: "[t]he device of claim 1, wherein the tuner provides data from a television carrier"; "[t]he device of claim 3, wherein the tuner provides data from a Separate Audio Programming channel [(SAP)] of the television carrier"; "[t]he device of claim 1, wherein the received data is audio data that has been converted from analog form to digital form"; "[t]he device of claim 1, wherein the extracted data is in digital form, has been encrypted and compressed, and further comprising a decryptor for providing conditional access and decrypting the provided data"; "[t]he device of claim 14[,] wherein the decryptor is enabled by a key received by the tuner"; "[t]he device of claim 14, wherein the decryptor is enabled by a key device connected to the decryptor"; and "[t]he device of claim 1, wherein a speed of transmission of said data is variable."

Command Audio also asserts a continuation of a continuation of a division of the '195, United States Patent No. 6,330,334, titled "Method and System for Information Dissemination Using Television Signals" and issued on December 11, 2001. Claim 30 of the '334 teaches:

> A receiver comprising:
>
> a television tuner;
>
> a controller coupled to the television tuner and which provides audio from a signal received at the television tuner, wherein the audio is carried in an SAP

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associated with television signals received at the tuner;

a memory coupled to the controller and which stores the audio;

a user interface coupled to the controller and which provides a menu; and

an audio output device coupled to the controller and which outputs the stored audio in response to a selection from the menu, wherein the stored audio has a designation associated with the menu.

Claims 31 and 34 respectively teach the receiver of claim 30 "wherein the audio is digitalized" and "wherein the menu is included in a set of hierarchical menus." Claim 40 teaches:

A receiver comprising:

a television tuner;

a controller coupled to the television tuner and which provides audio from a signal received at the television tuner;

a memory coupled to the controller and which stores the audio, wherein the audio is stored as a database;

a user interface coupled to the controller and which provides a menu; and

an audio output device coupled to the controller and which outputs the stored audio in response to a selection from the menu, wherein the stored audio has a designation associated with the menu.

Claim 43 teaches "[t]he receiver of claim 40, wherein the menu is included in a set of hierarchical menus." Claim 44 teaches:

A receiver comprising:

a television tuner;

a controller coupled to the television tuner and which provides audio from a signal received at the television tuner, wherein the audio is carried in an audio or video portion of television signals received at the tuner;

a memory coupled to the controller and which stores the audio;

a user interface coupled to the controller and which provides a menu; and

an audio output device coupled to the controller and which outputs the stored audio in response to a selection from the menu, wherein the stored audio has a designation associated with the menu.

And, claims 45, 47, and 48 respectively teach the receiver of claim 44, "wherein the audio is digitized," "wherein the audio is stored as a database," and "wherein the menu is included in a set of hierarchical menus."

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Lobby, Inc., 477 U.S. 242, 248 (1986). In this determination, the Court applies Federal Circuit law to patent issues and Ninth Circuit law to all other matters. *Midwest Indus., Inc. v. Karavan Trailers, Inc.*, 175 F.3d 1356, 1359 (Fed. Cir. 1999).

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infringe claims 30 and 44 of the '334, that the SAT-T60 infringes claims 44 and 45 of the '334, and that the VAIOs infringe claims 30, 34, 44, and 48 of the '334; it, however, is not entitled to summary judgment that the SVR-2000 and the SVR-3000 infringe claim 34 of the '334 or that the SVR-2000, the SVR-3000, and the SAT-T60 infringe claim 48 of the '334. Patent infringement, generally, is the making, the using, the offering to sell, or the selling of any patented invention within the United States and without authority. 35 U.S.C. § 271(a). Literal infringement analysis requires the Court to construe the scope and meaning of the claims-at-issue and, on summary judgment, to compare the construed claims to the accused device, asking whether that device contains every claim limitation. *Wenger*, 239 F.3d at 1231.

1. Claim Construction

The parties contest the scope and meaning of the term "set of hierarchical menus," as used in claims 34 and 48 of the '334. To construe a term, the Court considers the claim language, the specification, and the prosecution history. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (*en banc*). The analytical focus begins and remains centered on the claim language with a "heavy presumption" in favor of the construction understood by persons skilled in the relevant art. *Texas Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1201-02 (Fed. Cir. 2002). The Court then reviews the specification and the prosecution history to determine whether either rebuts this presumption. *Id.* at 1204; *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996); *see also Markman*, 52 F.3d at 979-80 (holding that the specification and prosecution history cannot enlarge, diminish, or vary claim limitations).

Command Audio argues that a menu structure is "hierarchical" as long as it has submenus, citing *The Microsoft Press Computer Dictionary* (2d ed. 1994) ("A database in which records are grouped in such a way that their relationships form a branching, treelike structure"), *The American Heritage College Dictionary* (3d ed. 1997) ("A series in which each element is graded or ranked"), *The Random House Dictionary* (2d ed. 1987) ("any system of persons or things ranked above one another"), *Webster's Ninth New College Dictionary* (9th ed. 1986) ("a graded or ranked series"), and *Tydeman* ("A fundamental design characteristic of all first-generation teletext and videotex systems is the adherence to hierarchical menu searches, i.e.,

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tree-structured databases."). Sony, conversely, argues that "hierarchical" excludes structures wherein a component has more than one superordinate component, citing *The New IEEE Standard Dictionary of Electrical and Electronics Terms* (6th ed. 1996) ("A structure in which components are ranked into levels of subordination; each component has zero, one or more subordinates; and no component has more than one superordinate component."). Sony also claims that the addition of the term "hierarchical" during the patent prosecution to avoid United States Patent No. 5,131,020, titled "Method of and System for Providing Continually Updated Traffic or Other Information to Telephonically and Other Communications-Linked Customers" and issued on July 14, 1992 ('020), precludes Command Audio's preferred construction.

The Court hereby adopts Sony's definition as the ordinary meaning of the term "hierarchical." The Court, preliminarily, finds the reference to the '020 ambiguous. Although the term "hierarchical" was added during prosecution to avoid prior art, the prosecution history does not clarify whether the patent examiner was rejecting (or even addressing) structures wherein one component has more than one superordinate. The definition from the *IEEE Dictionary*, nevertheless, controls because the patents-at-issue reside in the field of electrical engineering. *See Vanderlande Indus. Nederland BV v. International Trade Comm'n*, 366 F.3d 1311, 1321 (Fed. Cir. 2004) ("a general-usage dictionary cannot overcome credible art-specific evidence of the meaning or lack of meaning of a claim term."). And, *Tydeman* cannot alter this ordinary meaning. *See Merck & Co., Inc. v. Teva Pharms USA, Inc.*, 347 F.3d 1367, 1372 (Fed. Cir. 2003) ("It is well established that evidence extrinsic to the patent documents cannot change the meaning of a term as used in the claim from the meaning with which it is used in the specification."). The Court, thus, construes the term "a set of hierarchical menus" to mean a set of menus in which components are ranked into levels of subordination, each component has zero, one or more subordinates, and no component has more than one superordinate component.

2. Claim-Device Comparison

Command Audio moves for summary judgment that the SVR-2000, the SVR-3000, and the VAIOs infringe claims 30, 34, 44, and 48 of the '334 and that the SAT-T60 infringes claims 44, 45, and 48 of the '334. In its responses to Command Audio's requests for admissions, in its

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papers regarding this motion, and in its answers to this Court's questions at oral argument, Sony admitted that the SVR-2000, the SVR-3000, and the VAIOs infringe claim 30, that the VAIOs infringe claim 34, that the SVR-2000, the SVR-3000, the SAT-T60, and the VAIOs infringe claim 44, that the SAT-T60 infringes claim 45, and that the VAIOs infringe claim 48.

The Court, however, finds that there are genuine issues of material fact whether the SVR-2000 and the SVR-3000 infringe claim 34 and whether the SVR-2000, the SVR-3000, and the SAT-T60 infringe claim 48. Those claims require "a set of hierarchical menus." Command Audio does not contest that a user can directly access the SVR-2000, the SVR-3000, and the SAT-T60's "now playing list menu" and "individual program menus" from numerous locations, meaning that they have more than one superordinate. These menu sets, thus, are not hierarchical, as construed by the Court. The parties, in fact, agreed at the hearing that summary judgment would be improper if this Court adopted the *IEEE Dictionary*'s definition of the term "hierarchical." Perhaps, Command Audio will show the fact-finder at trial that these menus are hierarchical. At this point, though, there are genuine issues of material fact whether the SVR-2000, the SVR-3000, and the SAT-T60 use "a set of hierarchical menus." The Court grants Command Audio's motion that the SVR-2000, the SVR-3000, and the VAIOs infringe claim 30, that the VAIOs infringe claim 34, that the SVR-2000, the SVR-3000, the SAT-T60, and the VAIOs infringe claim 44, that the SAT-T60 infringes claim 45, and that the VAIOs infringe claim 48, but denies Command Audio's motion that the SVR-2000 and the SVR-3000 infringe claim 34 or that the SVR-2000, the SVR-3000, and the SAT-T60 infringe claim 48.

The Court additionally finds that there are genuine issues of material fact whether Sony's infringement was willful. A federal court may increase the damages awarded to the patentee (up to treble) for willful infringement. *See* 35 U.S.C. § 284. Infringement, however, is not willful if "the infringer, acting in good faith and upon due inquiry, had sound reason to believe that it had the right to act in the manner that was found to be infringing." *SRI Int'l., Inc. v. Advanced Tech. Labs., Inc.*, 127 F.3d 1462, 1464-65 (Fed. Cir. 1997). A willfulness determination specifically requires an examination of the totality of the circumstances, including: whether the infringer deliberately copied the ideas of another; when the infringer knew of the other's patent

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protection; whether the infringer investigated the scope of the patent and formed a good-faith belief that it was invalid or that it was not infringed; if the infringer had knowledge of the patent rights, did he exercise due care to determine whether or not his conduct would result in an infringement; and, the infringer's behavior as a party to the litigation. *Bott v. Four Star Corp.*, 807 F.2d 1567, 1572 (Fed. Cir. 1986), *overruled on other grounds by A.C. Aukerman Co. v. R.L. Chaides Const. Co.*, 960 F.2d 1020, 1038-1039 (Fed. Cir. 1992). "[W]illful action is quintessentially a question of fact, for it depends on findings of culpable intent and deliberate or negligent wrongdoing." *Biotec Biologische Naturverpackungen GmbH & Co. KG v. Biocorp, Inc.*, 249 F.3d 1341, 1356 (Fed. Cir. 2001) (quotation marks omitted).

Command Audio has not adduced evidence that Sony deliberately copied their ideas or that Sony has behaved in bad faith as a party to this litigation. Command Audio's willfulness allegations primarily are based on its notice (and subsequent communications) to Sony that the PTO issued the '626, the '195, and the '334. Command Audio fails to show any lack of care by Sony after that notice, beyond continuing to sell its products. On this record, the mere act of continuing to sell products is not, by itself, *per se* careless. And, upon close review and consideration, Sony's advice of counsel is not incompetent as a matter of law. *See Read Corp. v. Portec, Inc.*, 970 F.2d 816, 830 (Fed. Cir. 1992) ("That counsel's opinion turned out to be contrary to our judgment with respect to the [asserted] patent does not make his advice regarding that patent incompetent."); *Ortho Pharm.*, 959 F.2d at 944 (Fed. Cir. 1992) ("While an opinion of counsel letter is an important factor in determining the willfulness of infringement, its importance does not depend upon its legal correctness."). The fact-finder, nevertheless, certainly will be interested in Sony's delay obtaining that advice. *See Ortho Pharm. Corp. v. Smith*, 959 F.2d 936, 944 (Fed. Cir. 1992). But, this delay -- in and of itself -- is insufficient to show willfulness as a matter of law. *See Biotec*, 249 F.3d at 1356. The fact-finder, further, likely will weigh TiVo's involvement and possible responsibility and the failure of Command Audio to notify Sony of the PTO's corrections to the '195. In sum, whether Sony's conduct, or lack thereof, was reasonable or whether a prudent person would have acted sooner or differently is a question for the fact-finder at trial. The Court, thus, denies Command Audio's motion for

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summary judgment that Sony's infringement was willful.

B. Anticipation

The Court finds that there are genuine issues of material fact whether *Tydeman* anticipates the claims-at-issue. Although "[a] patent shall be presumed valid," 35 U.S.C. § 282, a patent claim is invalid if the alleged infringer demonstrates by clear and convincing evidence that prior art anticipated the patented invention. *Schumer v. Laboratory Computer Sys., Inc.*, 308 F.3d 1304, 1315 (Fed. Cir. 2002). Anticipation means that "the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent." 35 U.S.C. § 102(a). To anticipate, a reference "must disclose every element of the challenged claim and enable one skilled in the art to make the anticipating subject matter." *PPG Indus., Inc. v. Guardian Indus. Corp.*, 75 F.3d 1558, 1566 (Fed. Cir. 1996). "Moreover, a prior art reference may anticipate without disclosing a feature of the claimed invention if that missing characteristic is necessarily present, or inherent, in the single anticipating reference." *Schering Corp. v. Geneva Pharm.*, 339 F.3d 1373, 1377 (Fed. Cir. 2003). Otherwise stated, "that which infringes, if later, would anticipate, if earlier." *Knapp v. Morss*, 150 U.S. 221, 228 (1893). A district court sometimes may grant summary judgment on anticipation, *Beckson Marine, Inc. v. NFM, Inc.*, 292 F.3d 718, 723 (Fed. Cir. 2002), but the defense often raises complex fact issues that render summary judgment inappropriate. *Marion Merrell Dow, Inc. v. Geneva Pharms., Inc.*, 877 F. Supp. 531, 534 (D. Colo. 1994); *see also Gillette Co. v. Warner-Lambert Co.*, 690 F. Supp. 115, 116 (D. Mass. 1988) (citation omitted) ("To begin with, summary judgment is usually inappropriate in patent infringement cases, which are usually dominated by factual issues. This is especially true when the issue of anticipation has been raised, since anticipation is a factual issue.").

The inventor of the '195 and the '334 acknowledged that "the tuner wasn't new.... The concept of memory wasn't new. The concept of a menu or database wasn't new. It's the specific combination of the elements to provide the specific function that I believe to be new and which is the basis of these patents. . . ." Sony presents evidence and expert declarations that some or all of the elements of the claims-at-issue can be found or are inherent in *Tydeman*: "This

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discussion culminates in a description of what Tydeman labels an 'enhanced information retrieval terminal' (graphically depicted in Figure 9.3), which fully embodies the limitation of the asserted claims." Command Audio presents evidence and expert declarations to the opposite: "Nowhere in Tydeman is a device described which one skilled in the art would understand to include the specific combination of elements recited in the asserted claims. Tydeman provides only generalized lists of features that do not teach one skilled in the art to combine all the elements of any of the asserted patent claims." As demonstrated by this conflict, there are genuine issues of material fact whether *Tydeman* anticipates the asserted claims of the '195 and the '334. *Tydeman*, for example, arguably may teach (either directly or inherently) the claimed receivers, but summary judgment is improper on this record because the evidence is such that a reasonable jury could return a verdict for Command Audio that *Tydeman* does not anticipate the inventions disclosed by the '195 and the '334, particularly their specific use of hierarchical databases, SAP, hierarchical menus, digitization, and variable transmission speeds. The Court, thus, denies Sony's motion for summary judgment that *Tydeman* anticipates the claims-at-issue.

IV. CONCLUSION

For the reasons set forth above, Command Audio's motion for partial summary judgment is GRANTED IN PART AND DENIED IN PART and Sony's motion for summary judgment is DENIED. The Court finds, as a matter of law, that the SVR-2000 and the SVR-3000 infringe claims 30 and 44 of the '334, that the SAT-T60 infringes claims 44 and 45 of the '334, and that the VAIOs infringe claims 30, 34, 44, and 48 of the '334.

IT IS SO ORDERED.

Dated: 6/10/2004

MARTIN J. JENKINS
UNITED STATES DISTRICT JUDGE

United States District Court
For the Northern District of California

UNITED STATES DISTRICT COURT

FOR THE

NORTHERN DISTRICT OF CALIFORNIA

Command Audio Corporation,

Plaintiff,

v.

Sony Electronics, Inc.,

Defendant.
_____/

Case Number: CV02-0599 MJJ

CERTIFICATE OF SERVICE

I, the undersigned, hereby certify that I am an employee in the Office of the Clerk, U.S. District Court, Northern District of California.

That on June 15, 2004, I SERVED a true and correct copy(ies) of the attached, by placing said copy(ies) in a postage paid envelope addressed to the person(s) hereinafter listed, by depositing said envelope in the U.S. Mail, or by placing said copy(ies) into an inter-office delivery receptacle located in the Clerk's office.

Matthew B. Lehr
Latham and Watkins
135 Commonwealth Drvice
Menlo Park, CA 94025

Stephen A. Martin
Latham & Watkins LLP
135 Commonwealth Drive
Menlo Park, CA 94025-3656

Susan L. Baker Manning
Bingham McCutchen LLP
Three Embarcadero Center
San Francisco, CA 94111-4067

Dated: June 15, 2004

Richard W. Wieking, Clerk

By: Monica Tutson, Deputy Clerk

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D. C. 20549

FORM 10-K

Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934
for the fiscal year ended January 31, 2004

Commission file number 000-27141

TIVO INC.

(Exact name of registrant as specified in its charter)

Delaware	**77-0463167**
(State or other jurisdiction of incorporation or organization)	**(IRS Employer Identification No.)**
2160 Gold Street, PO Box 2160, Alviso, CA	**95002**
(Address of principal executive offices)	**(Zip Code)**

(408) 519-9100
(Registrant's telephone number including area code)

Securities registered pursuant to Section 12(b) of the Act:
NONE

Securities registered pursuant to Section 12(g) of the Act:
COMMON STOCK, $.001 PAR VALUE PER SHARE

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendments to this Form 10-K. ☒

Indicate by check mark whether the registrant is an accelerated filer (as defined in Exchange Act Rule 12b-2). Yes ☒ No ☐

As of July 31, 2003, the aggregate market value of the voting stock held by non-affiliates of the registrant, based upon the closing sales price for the registrant's common stock, as reported in the Nasdaq National Market System, was $481.6 million.

On April 1, 2004, the Registrant had 80,065,722 outstanding shares of common stock.

DOCUMENTS INCORPORATED BY REFERENCE

Parts of Registrant's Proxy Statement for the Annual Meeting of Stockholders to be held on August 4, 2004 are incorporated by reference into Part III of this Annual Report on Form 10-K (The Report of the Compensation Committee, the Report of the Audit Committee and the Comparative Stock Performance graph of the Registrant's Proxy Statement are expressly not incorporated by reference herein.)

Extend and Protect Our Intellectual Property. The value of the TiVo service is derived largely from the technology we have developed. Our intellectual property has allowed us to become a leading service provider in the category and is the fundamental reason that many of our customers and consumer electronics manufacturers choose us. We intend to continue to design, develop, and implement innovative technology solutions that leverage and enhance the TiVo service offering. We have adopted a proactive patent and trademark strategy designed to protect and extend our technology and intellectual property.

Promote and Leverage the TiVo Brand. We believe the strength of the TiVo brand is an advantage in attracting subscribers, consumer electronics manufacturers, advertisers, and other customers. In the past, we have dedicated substantial resources to promoting our brand through multiple advertising and marketing channels, participation in trade shows, sponsoring events, merchandising, and by leveraging strategic relationships. We believe the TiVo brand is strongly established within the DVR category.

Invest in Subscription Growth. For the fiscal year ending January 31, 2005, we plan to increase significantly our investment in subscription acquisition activities with a focus on growing TiVo Service subscriptions. We anticipate the majority of this investment will be in connection with the 2004 holiday shopping season. We believe this investment can create incremental revenue, profits, and cash flow and put us on a long-term growth trajectory towards creating sustainable profitability.

Our Technology

The TiVo service relies on three key components: the TiVo client software platform, the TiVo service infrastructure, and the TiVo-enabled DVR hardware design. Each of these components serves a vital function in the TiVo service.

TiVo Client Software. The TiVo client software runs on TiVo-enabled DVRs. It consists of all operational software required for a TiVo-enabled DVR to deliver the TiVo service properly and reliably. TiVo client software is based on the open-source Linux operating system, but the bulk of the software is proprietary to TiVo. The software includes system components such as a media-oriented file system, a high-performance transactional database, an integrated security system, and application components such as media management, and user interface. We have enhanced the client software to support multiple services and applications, such as digital music and photos. The TiVo client software manages interaction with the TiVo service infrastructure. After the initial set-up of the TiVo service, the TiVo-enabled DVR will automatically connect to the TiVo service infrastructure over a dial-up or broadband connection to download the program guide data, client software upgrades, Showcases, and other content.

TiVo Service Infrastructure. The TiVo service infrastructure enables the ongoing operation of the TiVo service, managing the distribution of proprietary services and specialized content such as program guide data, Showcases, and TiVo client software upgrades. It interfaces with our billing and customer support systems for service authorization and bug tracking. In addition, the TiVo service infrastructure collects anonymous viewing behavior data uploaded from TiVo-enabled DVRs for use in our audience measurement efforts. We believe the TiVo service infrastructure technology is scalable, robust, and reliable. The infrastructure has also been designed to take advantage of the networks of service provider customers, for example, by utilizing DIRECTV's satellite bandwidth to deliver data to DIRECTV receivers with TiVo service. The TiVo service infrastructure is extensible to support future initiatives such as e-commerce and lead generation, and authorization and billing for premium services.

DVR Hardware Design. The TiVo-enabled DVR hardware design is a specification developed by us for set-top boxes containing a hard disk drive, a CPU and memory, MPEG-2 digital video chips, a modem, and other components. We license this technology to consumer electronics manufacturers for them to modify and use in the production of DVRs that enable the TiVo service. We also provide the design to the contract manufacturer that produces TiVo-branded DVRs. The DVR hardware design has been integrated into a variety of products including DVD players, DVD recorders, DIRECTV receivers, and TiVo service DVRs. The DVR hardware design includes a modular front-end that allows the basic platform to be used for digital and analog broadcast, digital and analog cable, and satellite applications. In addition, the design includes USB ports to allow connection to broadband networks and external devices to enable future services.

Significant Relationships

DIRECTV. DIRECTV is the largest provider of satellite television in the U.S. We have had a longstanding relationship with DIRECTV in which DIRECTV assists us in marketing and delivering the TiVo service to its customer base. This relationship began in 1999 and was expanded in September of 2000 with the release of the first integrated DIRECTV DVR with TiVo. As of January 31, 2004, we had acquired approximately 676,000 subscriptions through this relationship. Currently, one of DIRECTV's officers is a member of our Board of Directors.

From 1999 thru October of 2002, we incurred upfront acquisition costs, recognized monthly recurring per subscriber revenues in a range from $4.15 to $9.95, and incurred recurring service costs for these subscribers. We agreed to pay DIRECTV a share of the revenues we collect from TiVo service subscriptions with standalone DVRs who subscribe to the DIRECTV service prior to June 30, 2003.

During 2002, we modified our agreements with the goal of giving DIRECTV the ability and economic incentive to drive volume growth. Under our new agreement, DIRECTV pays us a recurring monthly per-household fee for access to the technology needed to offer its customers the TiVo service. We incur limited recurring expenses and, on a marginal basis, limited or no acquisition costs for these subscriptions.

In January 2004, the average DIRECTV revenue per subscription, excluding advertising and audience research revenues, was approximately $1.62. We expect the average monthly subscription revenue per DIRECTV subscription to decline in the future as the mix of DIRECTV subscriptions shifts to the rapidly growing number of additions of new DIRECTV subscriptions, which involve no acquisition costs, lower recurring expenses, and lower subscription fees.

Our current agreement with DIRECTV does not expire until February 2007. Afterwards, while DIRECTV will have the option to continue to service the existing DIRECTV receivers with TiVo without further payment to us, it will not be able to add new DIRECTV receivers with TiVo unless DIRECTV elects to either purchase a royalty-bearing technology license from us or renew or replace our current agreement.

We also recognize revenue from DIRECTV for engineering professional services work on integrated DIRECTV satellite receivers with TiVo service and the related service infrastructure. We are currently providing DIRECTV with engineering professional services related to a new integrated DIRECTV satellite receiver with TiVo service that supports high definition television service, as well as engineering professional services related to hardware and service cost improvements and feature enhancements for existing platforms and customers.

Hardware Manufacturers. Several companies, including Toshiba, Pioneer, Sony, Philips, Thomson Multimedia, and Hughes, have manufactured and distributed TiVo-enabled DVRs. Each manufacturer is responsible for the manufacturing and distribution of its branded DVRs. We are solely responsible for the activation of the TiVo service on a manufacturer's DVR if the purchaser of the DVR decides to purchase a subscription to the TiVo service. A TiVo-enabled DVR without a subscription to the TiVo service has minimal functionality and can be used to pause, rewind, and fast-forward through live or recorded shows.

We also engage a contract manufacturer to build TiVo-enabled DVRs. We distribute the TiVo-enabled DVRs, selling them both directly to consumers and to major retailers who offer these products to consumers. The table below shows the breakdown of DVRs compatible with the TiVo service that were manufactured during the fiscal years ended January 31, 2004, 2003, and 2002.

	Fiscal Year Ended January 31,		
TiVo-enabled DVRs Manufactured by:	**2004**	**2003**	**2002**
Consumer Electronics Manufacturers	61%	41%	100%
Contract Manufacturer for TiVo	31%	54%	0%
Licensing and Engineering Professional Services Customer	8%	5%	0%
Total Manufactured TiVo-enabled DVRs	**100%**	**100%**	**100%**

Sales and Marketing

The TiVo Service. We market the TiVo service in two ways. First, we sell directly to consumers who have purchased a TiVo-enabled DVR. We sell the TiVo service either for a monthly subscription rate of $12.95, or for a single payment of $299 for the lifetime of the DVR. Second, we market our service through our relationship with DIRECTV. DIRECTV pays us a per-household monthly fee for the ability to offer our service to their customers. DIRECTV makes all pricing decisions regarding the service it sells to its own customer base.

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

(Mark One)

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended October 31, 2005.

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission file number 000-27141

TIVO INC.

(Exact name of registrant as specified in its charter)

Delaware	**77-0463167**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

2160 Gold Street, P.O. Box 2160, Alviso, CA 95002
(Address of principal executive offices including zip code)

(408) 519-9100
(Registrant's telephone number, including area code)

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days. YES ☒ NO ☐.

Indicate by check mark whether the registrant is an accelerated filer (as defined in Rule 12b-2 of the Exchange Act). YES ☒ NO ☐.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). YES ☐ NO ☒.

The number of shares outstanding of the registrant's common stock, $0.001 par value, was 85,125,642 as of November 28, 2005.

On February 5, 2002, Sony Corporation notified TiVo that Command Audio Corporation had filed a complaint against Sony Electronics, Inc. on February 2, 2002 in the U.S. District Court for the Northern District of California. The complaint alleges that, in connection with its sale of digital video recorders and other products, Sony infringes upon two patents owned by Command Audio, U.S. Patent Nos. 5,590,195 ("Information Dissemination Using Various Transmission Modes") and 6,330,334 ("Method and System for Information Dissemination Using Television Signals"). The complaint seeks injunctive relief, compensatory and treble damages and Command Audio's costs and expenses, including reasonable attorneys' fees. Under the terms of the Company's agreement with Sony governing the distribution of certain digital video recorders that enable the TiVo service, TiVo is required to indemnify Sony against any and all claims, damages, liabilities, costs and expenses relating to claims that its technology infringes upon intellectual property rights owned by third parties. On June 15, 2004, the Court denied Sony's motion for summary judgment of invalidity and granted in part and denied in part Command Audio's motion for summary judgment of infringement. The court found that certain Sony products, including Sony's accused products that enable the TiVo service, literally infringed certain claims of the '334 patent but did not rule on the validity or enforceability of the patents. A trial limited to certain of Sony's allegations that the patents-in-suit are unenforceable was conducted in October 2004. On January 7, 2005, the Court issued a Findings of Fact and Conclusions of Law ruling that the patents-in-suit are not unenforceable based on the allegations presented in the October 2004 trial. On May 12, 2005, the Court granted Sony's motion for partial summary judgment regarding damages. The Court found that Command Audio may not recover any royalties or other damages for sales of allegedly infringing products by Sony that occurred prior to December 4, 2001, the date on which the United States Patent and Trademark Office issued a certificate of correction for the '195 patent. Trial of the remaining issues, including infringement of certain asserted patent claims, validity of all the asserted patent claims and Sony's remaining allegations regarding the enforceability of the patents, has been suspended by the Court, in light of discussions between Sony and Command Audio concerning a possible negotiated resolution of the matter. Under the terms of our agreement with Sony governing the distribution of certain DVRs that enable the TiVo service, we are required to indemnify Sony against any and all claims, damages, liabilities, costs, and expense relating to claims that our technology infringes upon intellectual property rights owned by third parties. The Company believes Sony has meritorious defenses against this lawsuit; however, due to its indemnification obligations, the Company is incurring expenses in connection with this litigation. Since February 2002, the Company has incurred $5.8 million in legal expenses. The outcome of this matter and the extent of TiVo's potential exposure associated with it are not presently determinable. If Sony were to lose this lawsuit, the Company's business could be harmed.

On January 5, 2004, TiVo filed a complaint against EchoStar Communications Corporation in the U.S. District Court for the Eastern District of Texas alleging willful and deliberate infringement of U.S. Patent No. 6,233,389, entitled "Multimedia Time Warping System." On January 15, 2004, the Company amended its complaint to add EchoStar DBS Corporation, EchoStar Technologies Corporation, and Echosphere Limited Liability Corporation as additional defendants. The Company alleges that it is the owner of this patent, and further alleges that the defendants have willfully and deliberately infringed this patent by making, selling, offering to sell and/or selling digital video recording devices, digital video recording device software, and/or personal television services in the United States. On March 9, 2005, the Court denied motions to dismiss and transfer the Company's patent infringement case against EchoStar Communications Corporation and its affiliates. On August 18, 2005, the Court issued a claim construction order. Trial is currently scheduled to commence in March 2006, in Marshall, Texas. The Company seeks unspecified monetary damages as well as an injunction against the defendants' further infringement of the patent. The Company is incurring material expenses in this litigation.

On April 29, 2005, EchoStar Technologies Corporation filed a complaint against TiVo and Humax USA, Inc. in the U.S. District Court for the Eastern District of Texas alleging infringement of U.S. Patent Nos. 5,774,186 ("Interruption Tolerant Video Program Viewing"), 6,529,685 B2 ("Multimedia Direct Access Storage Device and Formatting Method"), 6,208,804 B1 ("Multimedia Direct Access Storage Device and Formatting Method") and 6,173,112 B1 ("Method and System for Recording In-Progress Broadcast Programs"). The complaint alleges that EchoStar Technologies Corporation is the owner by assignment of the patents allegedly infringed. The complaint further alleges that the TiVo and Humax have infringed, contributorily infringed and/or actively induced infringement of the patents by making, using, selling or importing digital video recording devices, digital video recording device software and/or personal television services in the United States that allegedly infringe the patents, and that such infringement is willful and ongoing. Under the terms of the Company's agreement with Humax governing the distribution of certain DVRs that enable the TiVo service, the Company is required to indemnify Humax against any claims, damages, liabilities, costs, and expenses relating to claims that the Company's technology infringes upon intellectual property rights owned by third parties. On May 10, 2005, Humax formally notified TiVo of the claims against it in this lawsuit as required by Humax's agreement with TiVo. On July 1, 2005, the defendants filed their answer and counterclaims. The Company intends to defend this action vigorously; however, it could be forced to incur material expenses in connection with this lawsuit and/or as a result of its indemnification obligations and, in the event there is an adverse outcome, the Company's business could be harmed.

Subscriber Networks

Scientific Atlanta

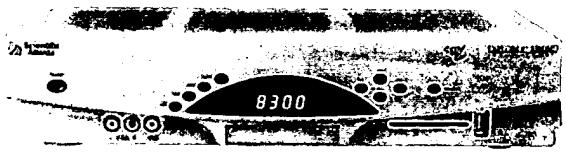
Explorer® 8300™ Series Digital Video Recorders Offer Standard, HD, and Multi-Room™ Capabilities

Description

The **Explorer® 8300™ DVR** provides subscribers with the latest enhancements in cable television viewing.

The **Explorer 8300HD™ DVR** provides HD subscribers with the latest HD DVR features.

The **Explorer 8300 Multi-Room™ DVR** provides subscribers access to recorded programs in multiple rooms throughout the home on standard Explorer set-tops.



8300 DVR Family Features

The Explorer 8300 DVR is a standard definition, two-tuner digital video recorder (DVR) that provides the DVR services your subscribers want:

- Record one program while watching another
- Watch two programs at the same time, using the picture-in-picture (PIP) capability of the Explorer 8300 DVR
- Record programs without a VCR
- Supports expanded storage through an optional external Serial ATA (SATA) hard drive
- Easily access video/audio inputs and the USB port from the front panel, and access the Coaxial Digital Audio Output connector on the back panel

8300HD DVR Additional Features

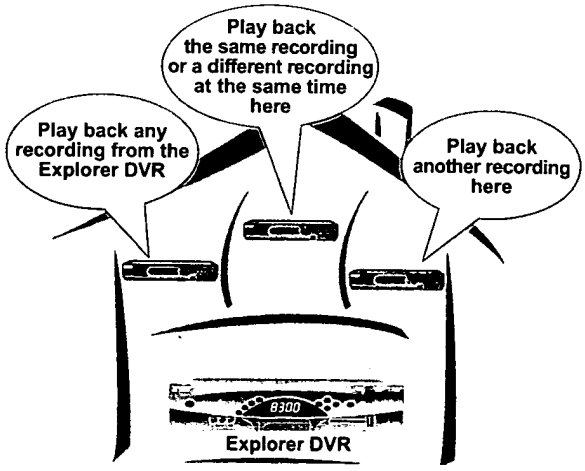
The Explorer 8300HD DVR provides the same features as the standard definition 8300 DVR and more:

- Connect to the set-top through the YPbPr, HDMI™, or optional 1394 connectors to an HDTV
- Stretch and zoom the video picture to maximize its viewable area on the HDTV display
- Select the resolution (scan rate) best suited for the HDTV (480i, 480p, 720p, or 1080i)
- Utilize the optical Digital Audio Output connector to easily connect to higher-end audio equipment

8300 Multi-Room DVR Additional Features

The Explorer 8300MR™ DVR delivers all the convenience and control of a two-tuner DVR—to as many as four televisions using existing wiring in the home and digital set-tops you may already have:

- Access the list of recorded shows stored on the Explorer 8300 MR-DVR server and its optional SATA hard drive
- Playback, pause, rewind, and/or fast-forward any recording at any time on set-tops in other rooms



Explorer 8300 Serie gital Video Recorders Offer Standard, HD, and Multi-Room Capabilities

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Specifications

8300 and 8300MR-DVR Specifications

Base SD Model Features	Description
DVR with 80 GB Hard Drive (Larger hard drives are available. Contact your North American marketing manager for more information.)	The 80 GB model allows up to 50 hours* of SD programs to be recorded and stored using DVR functions Gives subscribers complete control over watching, pausing, rewinding, replaying, and fast forwarding live programs using the remote control **The total program hours that can be stored depends upon the format and data rate of the programming source.*
DAVIC Reverse Path Data Transmitter	Allows IP-based, real-time, two-way communication between the Explorer 8300 Series DVR and the cable service provider's headend Supports interactive services such as xOD (anything-On-Demand), VOD (video-on-demand), and SVOD (subscription VOD)
Optional DOCSIS® 1.0 cable modem	The internal DOCSIS 1.0 cable modem implements the Baseline Privacy Interface and DOCSIS SNMP MIBs. The upstream transmitter can send QPSK and 16-QAM bursts to any headend CMTS that implements DOCSIS 1.0 or DOCSIS 1.1 specifications.
MPEG-2 MP@ML Standard Definition Digital Video Decompression	Allows decompression and presentation of audio and video Delivers up to 720 x 480i video resolution
Dual Analog and Digital Service Tuners (True Picture-In-Picture)	Allows both analog and MPEG-2 digital channels to be tuned and displayed Allows two programs to be displayed simultaneously using the PIP function
Dual Analog Encoders	Allows two analog SD programs to be recorded and displayed simultaneously
Dolby® Digital Audio and MPEG-1 Audio Support	Supports digital audio decoding of two-channel MPEG-1 Layers I & II and Dolby Digital with up to 5.1 channels of multi-channel surround sound. Also downmixes multi-channel Dolby Digital programs to surround-compatible left/right outputs.
PowerKEY®Conditional Access System	Provides digital security using an RSA encryption algorithm that mathematically matches pairs of keys Encrypts all recordings on an internal hard disk drive or on an optionally attached external SATA hard disk drive Allows upgrades using a network download
PowerTV® Operating System with HTML Client Engine	Offers a stable operating system and open Application Programming Interfaces (APIs) to support native applications and third-party middleware applications
Enhanced Graphics Engine	Displays up to 65,000 colors simultaneously Enables high-resolution 640 x 480 IPG graphics while simultaneously scaling MPEG-2 video
Powerful 32-bit RISC Processors	Features two 250-MHz (500 MIPs total) processors to perform tasks and launch applications quickly

Explorer 8300 Serie[redacted]gital Video Recorders[redacted] Offer Standard, HD, and Multi-Room Capabilities

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Base SD Model Features, continued	Description
Over 96 MB Total Memory	Flash: 512 KB Applications DRAM: 64 MB Media DRAM: 16 MB MPEG encoding: 16 MB of DRAM NVM: 8 KB
64 and 256 ITU J.83 Annex B QAM Support	Supports open standards for QAM delivery and demodulation
Both Internal Security Microprocessor and Smart Card Slot	Provides hardware-assisted conditional access options with capability to upgrade the security, if ever needed
Macrovision® Copy Protection Support (licensing fee required to activate)	Activation allows cable service providers to add another layer of copy protection software, called Macrovision, that restricts unauthorized subscribers from making analog copies of digital transmissions, such as VOD and SVOD
BTSC/SAP Decoder	Provides stereo sound on analog channels through the baseband left and right audio outputs
BTSC Encoder	Provides stereo sound on the RF coaxial output
Coaxial Digital Audio Output	Supports coaxial interconnection with surround sound receivers (includes the encoding of analog audio)
Baseband Audio/Video Outputs	Offers a baseband audio/video connection to a VCR or TV
RF Cable Out	Offers a composite audio/video connection to a VCR or TV
Front Composite Audio/Video Inputs (will require a software enhancement download when available)	Supports interconnection to home consumer devices, such as VCRs, camcorders, or digital cameras for video and audio pass-through to the TV
Provision for Name Branding	Allows you to brand the Explorer 8300 series DVR with your company name and logo
External SATA Connector	External Serial ATA (SATA) connector provides a high-bandwidth connection to an External SATA hard disk drive for expanded storage space for recorded programs
Optional Dual IEEE 1394 Digital Outputs with Digital Transmission Content Protection (DTCP) (will require a software enhancement download when available)	Optional dual IEEE 1394 outputs with DTCP will provide a 400-Mbps interconnection to digital display devices (HDTVs)
Universal Serial Bus (USB) Port (will require a software enhancement download when available)	Front panel USB port for easy-to-access connection with home consumer devices such as USB keyboards

Explorer 8300 Serie[redacted]gital Video Recorders[redacted] Offer Standard, HD, and Multi-Room Capabilities

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8300HD and 8300HD Multi-Room DVR Specifications

Additional HD Model Features	Description
DVR with a 80 GB or 160 GB Hard Drive (Larger hard drives are available. Contact your North American marketing manager for more information.)	The 160 GB model allows up to 90 hours* of SD programs or up to 20 hours* of HD programs to be recorded and stored using DVR functions Gives subscribers complete control over watching, pausing, rewinding, replaying, and fast forwarding live programs using the remote control **The total program hours that can be stored depends upon the format and data rate of the programming source.*
Analog Component HDTV Outputs	Provides YPbPr outputs for quick and easy connection to most HDTV sets
YPbPr and Audio Left/Right Cable Kit	Provides connection from the HD analog video and audio outputs to the HDTV set
Optical Digital Audio Output	Supports optical interconnection with surround sound receivers (includes the encoding of analog audio)
MPEG-2 MP@HL High Definition Digital Video Decompression	Allows decompression and presentation of audio and video Delivers the following video resolutions: 1920 x 1080i 720 x 480p 1280 x 720p 720 x 480i
HDMI 1.0 Digital Audio/Video Output with HDCP Copy Protection	The High Definition Multimedia Interface (HDMI) provides uncompressed digital video and audio quality in a simple, user-friendly connector. HDMI, combined with HDCP (High-Bandwidth Digital Content Protection) provides the optimal, secure connection to an HDTV set that supports the HDMI with HDCP interface. HDMI is backward compatible with the DVI 1.0 with HDCP video interfaces on earlier versions of HDTVs.
Over 112 MB Total Memory	Flash: 512 KB Applications DRAM: 64 MB Media DRAM: 32 MB MPEG encoding: 16 MB of DRAM NVM: 8 KB
Optional Application Memory	Applications DRAM: 128MB

8300 Series Dimensions

Dimensions (all 8300 models)	Description	
Product Dimensions (WxDxH)	15.60 in. x 11.20 in. x 3.25 in.	(39.7 cm x 28.5 cm x 8.3 cm)
Product Weight	8.3 lbs	(3.8 kg)
Carton Dimensions (WxDxH)	18.00 in. x 14.00 in. x 6.12 in.	(45.8 cm x 35.6 cm x 15.6 cm)
Weight Including Packaging	11.6 lbs	(5.3 kg)

8300 Series Placement and Temperature Range

Placement	
Placement Requirement	Locate the 8300 with at least two inches of open space above and on each side to provide adequate cooling.
Temperature Range	
Room Temperature Range (Operating)	The 8300 should be installed in an environment where the air temperature surrounding the unit is between 40°F to 105°F (5C to 40C).

Explorer 8300 Serie[redacted]gital Video Recorders[redacted] Offer Standard, HD, and Multi-Room Capabilities

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Ordering Information

Contact your Sales Representative for product availability in your area.

Part Number	Description	Availability
4003980	Explorer 8300 DVR with 80GB Hard Drive	Now
4007951	Explorer 8300 DVR with 80GB Hard Drive and Dual IEEE 1394 Ports	Now
4006190	Explorer 8300HD DVR with 160GB Hard Drive and HDMI	Discontinued*
4006781	Explorer 8300HD DVR with 160GB Hard Drive, HDMI, and Dual IEEE 1394 Ports	Now
4007317	Explorer 8300 Multi-Room DVR with 80GB Hard Drive	Now
4007950	Explorer 8300 Multi-Room DVR with 80GB Hard Drive and Dual IEEE 1394 Ports	Now
4003610	Explorer 8300HD Multi-Room DVR with 160GB Hard Drive and HDMI	Discontinued*
4006775	Explorer 8300HD Multi-Room DVR with 160GB Hard Drive, HDMI, and Dual IEEE 1394 Ports	Now
4008560	Explorer 8300 with 80GB Hard Drive and DOCSIS	Now
4008561	Explorer 8300HD with 160GB Hard Drive, HDMI, and DOCSIS	Discontinued*
4009287	Explorer 8300HD with 160GB Hard Drive, HDMI, DOCSIS, and Dual IEEE 1394 Ports	Now
4010581	Explorer 8300HD Multi-Room DVR with 160GB Hard Drive, HDMI, DOCSIS, and Dual IEEE-1394 Ports	Fourth Quarter, 2005
4011815	Explorer 8300HD DVR with 160GB Hard Drive, HDMI, DOCSIS, 128MB Application Memory, and Dual IEEE-1394 Ports	Fourth Quarter, 2005
4011816	Explorer 8300HD Multi-Room DVR with 160GB Hard Drive, HDMI, DOCSIS, 128MB Application Memory, and Dual IEEE-1394 Ports	Fourth Quarter, 2005

**As required by US Code of Federal Regulations, Title 47, §76.640 (www.gpoaccess.gov), these models are not produced or available after June 30, 2005.*

Accessories

Part Number	Description
4006369	AllTouch® 8550 Universal Remote Control
1002048	HDMI to HDMI Cable
1002056	HDMI to DVI Cable (for use in connecting the HDMI port to older, DVI equipped HDTVs)
4004725	4-Port Splitter Isolation Module (SIM) for MR-DVR installations. For more information, refer to datasheet part number 7001717
4008261	Passive Isolation Module (IM) for MR-DVR installations. For more information, refer to datasheet part number 7007588
4011635	Inline Single Port Isolation Module for MR-DVR installations
749790	RGB adaptor and cables (for adapting Explorer HD set-tops to HDTV sets that are equipped with only RGB-type inputs) For more information refer to datasheet part number 752184.
4000633	Scientific-Atlanta Resident Application (SARA) DVR Software Installation CD (only order one CD for each headend)

Software

Part Number	Description
4000633	Scientific-Atlanta Resident Application (SARA) DVR Software Installation CD (only order one CD for each headend)
752351	DVR Software License (line item on Explorer 8300 DVR Purchase Order)

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1-800-722-2009 or 770-236-6900
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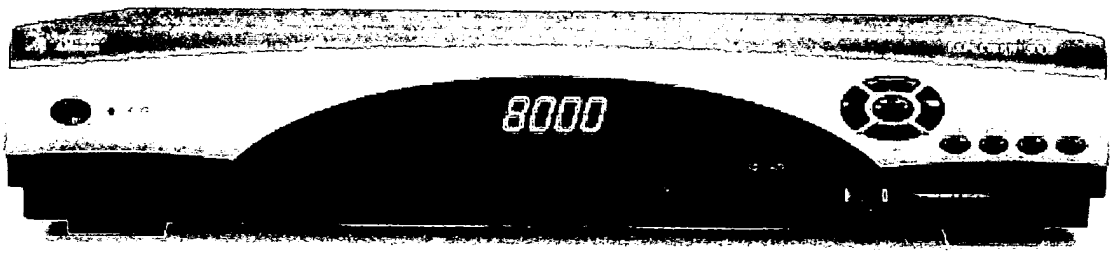
Part Number 7004920 Rev D
October 2005

Subscriber Networks

Explorer® 8000™ Home Entertainment Server

Scientific Atlanta



Description

The Explorer® 8000™ Home Entertainment Server with Digital Video Recording (DVR) and Picture-in-Picture (PIP) functionality gives consumers more control, convenience, and choice in their TV viewing experience while giving cable service providers the capability to increase revenue streams, profitability, and reduce subscriber churn.

Consumer Features

- Control live TV — If the phone rings during your favorite live show, just press Pause on the AllTouch® 8400™ remote control. The show will stay paused for up to one hour. Press Play to resume the show whenever you are ready.
- Use Instant Replay whenever you want — If you missed the winning score, just press Instant Replay to see what you missed.
- Broaden your choices — Now you can record one program and change channels to watch another program at the same time. In fact, you can record two programs airing simultaneously. And while recording the two programs, you can select a third, pre-recorded program to watch at the same time.
- Pre-set the 8000 to record all episodes of a TV program for you — Simply select the program from the Interactive Program Guide (IPG) and select the Record All Episodes option.
- Create your own personalized video library of favorite TV shows — Store up to 50* hours of programs and play them back at any time.
- Display two programs on the screen simultaneously — Using the PIP remote control button, view two live programs, or one live and one recorded program simultaneously, regardless of the make or brand of your TV.

Cable Operator Benefits

- Build additional monthly revenue streams with new DVR, video-on-demand (VOD), and PIP services.
- Use VOD and DVR as complimentary services to offer more compelling content than satellite offerings.
- Reduce churn by providing more of the services that consumers really want.
- Derive greater profitability with the 8000 platform, which is scalable to support future applications development and continued growth.
- Reduce installation and service costs with the 8000's consumer-friendly, self-install, Plug and Play operation.

* The total program hours storable depends upon the format of the programming source.

Explorer 8000 Home Entertainment Server

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Hardware Specifications

Features	Benefits
DVR with 80-GB Hard Drive	Allows up to 50* hours of video programs to be recorded and stored using DVR functions
	Gives subscribers complete control over watching, pausing, rewinding, replaying, and fast forwarding live programs using the remote control and 80-GB hard drive
DAVIC Reverse Path Data Transmitter	Allows IP-based, real-time, two-way communication between the Explorer 8000 Home Entertainment Server and the headend
	Supports interactive services such as *anything*-on-demand (xOD), VOD, and subscription VOD (SVOD)
MPEG-2 MP@ML Standard Definition Digital Video Decompression	Allows decompression and presentation of audio and video
	Delivers 640 x 480 video resolution
Dual Analog and Digital Service Tuners (True Picture-In-Picture)	Allows both analog and MPEG-2 digital channels to be tuned and displayed
	Allows two programs to be displayed simultaneously using the picture-in-picture function
Dual MPEG Encoder	Allows up to two different analog programs to be digitally encoded onto the hard disk drive simultaneously
AC-3®Digital Audio and MPEG-1 Audio Support	Supports leading digital audio standards
Dual Analog Encoders	Allows two analog SD programs to be recorded and displayed simultaneously
Composite Audio/Video Outputs	Connects to video and the left and right audio inputs of a TV (standard definition)
PowerKEY®Conditional Access System	Provides digital security using an RSA encryption algorithm that mathematically matches pairs of keys
	Encrypts all recordings on an internal 80-GB hard disk drive
PowerTV® Operating System with HTML Client Engine	Offers a more stable operating system and open Application Programming Interfaces (APIs) to support native applications and third-party middleware applications
	Allows upgrades using a network download
Enhanced Graphics Engine	Displays up to 65,000 colors simultaneously
	Enables high-resolution 640 x 480 IPG graphics while simultaneously scaling MPEG-2 video
Powerful 32-bit RISC Processors	Features two 164 MHz (328 MIPs total) processors to perform tasks and applications quickly
Over 48 MB Total Memory	Flash: 8 MB Applications DRAM: 16 MB Media DRAM: 8 MB MPEG encoding: 16 MB of DRAM NVM: 8 KB
64 and 256 ITU J.83 Annex B QAM Support	Supports open standards for QAM delivery and demodulation
Both Internal Security Microprocessor and Smart Card Slot	Provide hardware-assisted conditional access options with capability to upgrade the security, if ever needed
Macrovision® Copy Protection Support (licensing fee required to activate)	Activation allows cable operators to add another layer of copy protection software, called Macrovision, that restricts unauthorized subscribers from making analog copies of digital transmissions, such as VOD and SVOD
BTSC/SAP Decoder	Provides stereo sound on analog channels through the baseband left and right audio outputs
S/PDIF Digital Audio Output	Supports interconnection with surround sound receivers
Provision for Name Branding	Allows you to brand the Explorer 8000 Home Entertainment Server with your company name and logo

* The total program hours storable depends upon the format of the programming source.

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Hardware Specifications – CONTINUED

Features	Benefits
Universal Serial Bus (USB) Ports (Optional back panel port will require optional software enhancement by downloading software when available)	Provides one standard, front panel USB port for easy-to-access connection with home consumer devices such as USB keyboards
	Provides one optional back panel USB port for connecting additional USB devices
Second Composite Audio/Video Outputs (will require software enhancement by downloading software when available)	Offers a second connection, labeled "OUT 2 (VCR)," for connection to a VCR
Composite Audio/Video Inputs (will require software enhancement by downloading software when available)	Supports interconnection to home consumer devices, such as VCRs, camcorders, or digital cameras for video pass-through to the TV
Optional Dual IEEE 1394 Digital Outputs with 5C Copy Protection (will require software enhancement by downloading software when available)	Provides optional dual IEEE 1394 outputs with 5C copy protection that provide a 400-Mbps interconnection each to home consumer devices such as digital televisions (see part number 736360 in **Ordering Information**)

Ordering Information

Product	Part Number
Explorer 8000 Home Entertainment Server	736360
DVR Software License (line item on Explorer 8000 Purchase Order)	752351
Explorer 8000 Home Entertainment Server without IEEE 1394 Ports	4004570
AllTouch 8400 Remote Control	745684 Rev B
Scientific-Atlanta Resident Application (SARA) DVR Software Installation CD	4000633

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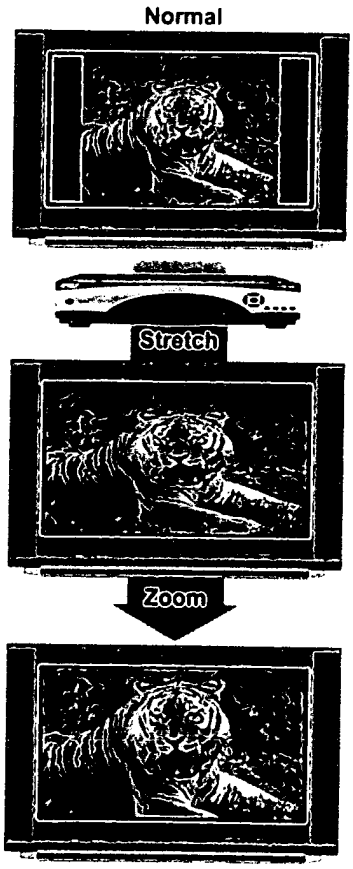
Part Number 745538 Rev E
August 2003

Scientific Atlanta

Explorer® 8000HD™ Home Entertainment Server

Description

Scientific-Atlanta's Explorer® 8000HD™ Home Entertainment Server will combine three compelling video services into one integrated set-top: high-definition (HD) programming, digital video recorder (DVR), and HD on-demand content. This combination will allow cable service providers to grow their subscriber base, increase customer satisfaction, and boost existing revenue streams. Consumers will get a rich home entertainment experience with eye-popping HD picture clarity; the movie theater experience of surround sound; personalized recording with DVR control and convenience; and access to HD on-demand content. Please see your Scientific-Atlanta sales representative regarding product availability.



The Explorer 8000HD Entertainment Server will make it easy to maximize the screen image for non-HD channels. For a widescreen HDTV set, click "stretch" or "zoom" from the Quick Settings menu on the Explorer 8000HD server.

Cable Service Provider Benefits

- Build additional monthly revenue streams with new HD-DVR, video-on-demand (VOD), and picture-in-picture (PIP) services.
- Use VOD and DVR as complimentary services to offer more compelling content than satellite offerings.
- Reduce churn by providing more of the services that consumers really want.
- Derive greater profitability with the Explorer platform, which is scalable to support future applications development and continued growth.
- Reduce installation and service costs with the Explorer 8000HD server's consumer-friendly, self-install, Plug and Play operation.

Consumer Benefits

- Benefit from Dual-Tuner Functionality – You will be able to record one program while you are watching another program simultaneously. You will be able to record two programs at the same time that you play back a third.
- Control live TV – If the phone rings during your favorite live show, just press the Pause button on the AllTouch® 8400™ Remote Control. The show will stay paused for up to one hour. Press Play to resume the show whenever you are ready.
- Use Instant Replay whenever you want – If you missed the winning score, just press the Instant Replay button to see what you missed.

Consumer Benefits, Continued

- Pre-set the Explorer 8000HD server to record all episodes of a TV program for you – Simply select the program in the Interactive Program Guide and select the "Record All Episodes" option.
- Create your own personalized video library of favorite TV shows – Play back your shows at any time.
- Display two programs on-screen simultaneously – Using the PIP remote control button, view two live programs, or one live and one recorded program simultaneously, regardless of the brand of your TV.

Features

The 8000HD will offer the following features:

- Decodes all 18 ATSC digital video formats, including the 6 high-definition (HD) digital formats for HDTV.
- Outputs video to the HDTV display in four resolutions: 480i, 480P, 720P, or 1080i. These resolutions, or scan rates, allow consumers to select the scan rate best suited for their HDTV set.
- Decodes all standard-definition digital formats and all analog video services as well.
- Allows consumers to stretch and zoom the video picture to maximize its viewable area on the HDTV display.

To meet the demands of existing and future network configurations, the 8000HD will offer power, capacity, and compatibility. The Explorer 8000HD Home Entertainment Server will have a reverse-path DAVIC transmitter capable of 1.544 Mbps for two-way communications capability to support such applications as the Interactive Program Guide and VOD. The 40 MB of application and program memory, along with dual 166 MHz RISC microprocessors, will manage multiple program tasks and applications with speed and power.

Specifications

Feature	Description
DVR with 80 GB or 160 GB Hard Drive	The 160 GB model will allow up to 20 hours* of HD programs or up to 90 hours* of SD programs to be recorded and stored using DVR functions (**The total program hours that can be stored depends upon the format and data rate of the programming source.*)
	Will give subscribers complete control over watching, pausing, rewinding, replaying, and fast forwarding live HD programs using the remote control
Analog Component HDTV Outputs	Will provide YPbPr outputs for quick and easy connection to most HDTV sets
DAVIC Reverse Path Data Transmitter	Will allow IP-based, real-time, two-way communication between the Explorer 8000HD Home Entertainment Server and the cable service provider's headend
	Will support interactive services such as xOD (*anything*-On-Demand), VOD, and subscription VOD (SVOD)
MPEG-2 MP@ML Standard Definition Digital Video Decompression	Will allow decompression and presentation of audio and video
	Will deliver 640 x 480 video resolution
Dual Analog and Digital Service Tuners (True Picture-In-Picture)	Will allow both analog and MPEG-2 digital channels to be tuned and displayed
	Will allow two programs to be displayed simultaneously using the PIP function
Dual Analog Encoders	Will allow two analog SD programs to be recorded and displayed simultaneously
Dolby Digital® Audio and MPEG-1 Audio Support	Will support leading digital audio standards
PowerKEY®Conditional Access System	Will provide digital security using an RSA encryption algorithm that mathematically matches pairs of keys
	Will encrypt all recordings on an internal hard disk drive
	Will allow upgrades using a network download

Specifications, Continued

Feature	Description
PowerTV® Operating System with HTML Client Engine	Will offer a stable operating system and open Application Programming Interfaces (APIs) to support native applications and third-party middleware applications
Enhanced Graphics Engine	Will display up to 65,000 colors simultaneously
	Will enable high-resolution 640 x 480 IPG graphics while simultaneously scaling MPEG-2 video
Powerful 32-bit RISC Processors	Will feature two 166-MHz (332 MIPs total) processors to perform tasks and launch applications quickly
Over 64 MB Total Memory	Flash: 8 MB Applications DRAM: 32 MB Media DRAM: 32 MB MPEG encoding: 16 MB of DRAM NVM: 8 KB
64 and 256 ITU J.83 Annex B QAM Support	Will support open standards for QAM delivery and demodulation
Both Internal Security Microprocessor and Smart Card Slot	Will provide hardware-assisted conditional access options with capability to upgrade the security, if ever needed
Macrovision® Copy Protection Support (licensing fee required to activate)	Activation will allow cable service providers to add another layer of copy protection software, called Macrovision, that restricts unauthorized subscribers from making analog copies of digital transmissions, such as VOD and SVOD
BTSC/SAP Decoder	Will provide stereo sound on analog channels through the baseband left and right audio outputs
S/PDIF Coaxial Digital Audio Output	Will support coaxial interconnection with surround sound receivers and encodes analog audio
S/PDIF Optical Digital Audio Output	Will support optical interconnection with surround sound receivers and encodes analog audio
YPbPr and Audio Left/Right Cable Kit	Will provide connection from the HD analog video and audio outputs to the HDTV set
Provision for Name Branding	Will allow you to brand the Explorer 8000HD Home Entertainment Server with your company name and logo
Composite Audio/Video Inputs (will require a software enhancement download when available)	Will support interconnection to home consumer devices, such as VCRs, camcorders, or digital cameras for video and audio pass-through to the TV
VCR Composite Audio/Video Outputs (will require a software enhancement download when available)	Will offer a composite audio/video connection to a VCR for archiving content from the hard disk drive
Optional DVI 1.0 Digital HDTV Output with HDCP Copy Protection (will require a software enhancement download when available)	Optional DVI 1.0 port with HDCP (High-Bandwidth Digital Content Protection) will support digital connection to an HDTV set supporting the DVI interface
	HDCP will provide a copy protection interface between the 8000HD and the HDTV set
Optional Dual IEEE 1394 Digital Outputs with 5C Copy Protection (will require a software enhancement download when available)	Optional dual IEEE 1394 outputs with 5C copy protection will provide a 400-Mbps interconnection each to home consumer devices such as digital televisions (see part number 749970 in **Ordering Information**)
Universal Serial Bus (USB) Ports (will require a software enhancement download when available)	One standard, front panel USB port for easy-to-access connection with home consumer devices such as USB keyboards
	One optional back panel USB port for connecting additional USB devices

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Ordering Information

Contact your Sales Representative for product availability in your area.

Part Number	Description
4004564	Explorer 8000HD Home Entertainment Server with 160GB Hard Drive and DVI
749970	Explorer 8000HD Home Entertainment Server with 160GB Hard Drive, DVI, and Dual IEEE 1394 Ports
4005536	Explorer 8000HD Home Entertainment Server with 80GB Hard Drive and DVI
4005534	Explorer 8000HD Home Entertainment Server with 80GB Hard Drive, DVI, and Dual IEEE 1394 Ports
4004878	DVR Software License (line item on Explorer 8000HD Purchase Order)
745684	AllTouch 8400 Remote Control
4005400	Scientific-Atlanta Resident Application (SARA) DVR Software Installation CD **(only order one CD for each headend)**

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Part Number 4004400 Rev C
November 2003

Subscriber Networks

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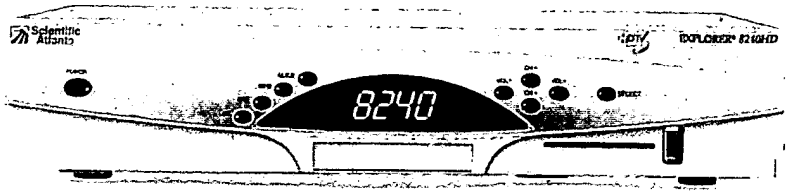
Explorer® 8240™ Digital-Only DVR for Standard, HD, and Multi-Room™ Capabilities

Description



The **Explorer® 8240™ DVR** provides subscribers with the latest enhancements in cable television viewing.

The **Explorer 8240HD™ DVR** provides HD subscribers with the latest HD DVR features.

The **Explorer 8240HD™ Multi-Room™ DVR** provides subscribers access to recorded programs in multiple rooms throughout the home on standard Explorer set-tops.

8240 DVR Series Features

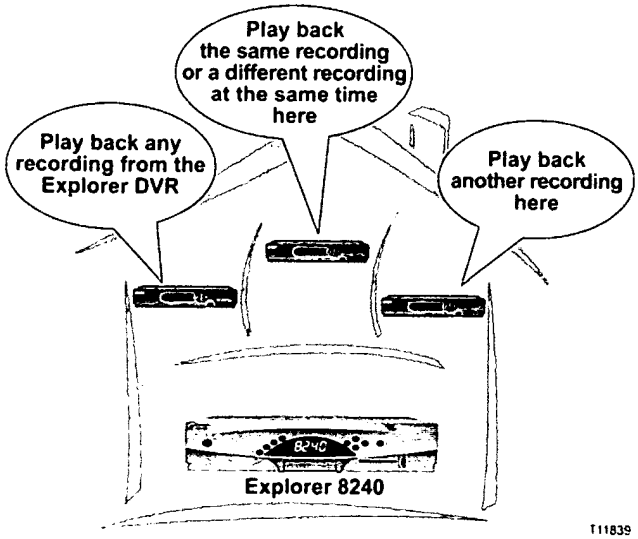
The Explorer 8240 DVR is a standard definition, digital-only, two-tuner digital video recorder (DVR) that provides the DVR services your subscribers want:

- Record one program while watching another
- Watch two programs at the same time, using the picture-in-picture (PIP) capability of the Explorer 8240 DVR
- Record programs without a VCR
- Supports expanded storage through an optional external Serial ATA (eSATA) hard drive
- Coaxial Digital Audio Output supports connection to Home Theater Surround Sound

8240HD DVR Additional Features

The Explorer 8240HD DVR provides the same features as the standard definition 8240 DVR and more:

- Connect to the set-top through the YPbPr, HDMI™, or 1394 connectors
- Stretch and zoom the video picture to maximize its viewable area on the HDTV display
- Select the resolution (scan rate) best suited for the HDTV (480i, 480p, 720p, or 1080i)
- Utilize the optical Digital Audio Output connector to easily connect to higher-end audio equipment



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8240HD Multi-Room DVR Additional Features

The Explorer 8240HD Multi-Room DVR delivers all the convenience and control of a two-tuner DVR—to as many as four televisions using existing wiring in the home and digital set-tops you already have:

- Access the list of recorded shows stored on the Explorer 8240HD Multi-Room DVR server and its optional eSATA hard drive
- Playback, pause, rewind, and/or fast-forward any recording at any time on set-tops in other rooms

Explorer® 8240™ [ ]tal-Only DVR for Standard, HD, and Multi-Room™ Capabilities

Specifications

8240 DVR Specifications

Base SD Model Features	Description
DVR with 80 GB Hard Drive (Larger hard drives are available. Contact your North American marketing manager for more information.)	The 80 GB model allows up to 50 hours* of SD programs to be recorded and stored using DVR functions Gives subscribers complete control over watching, pausing, rewinding, replaying, and fast forwarding live programs using the remote control **The total program hours that can be stored depends upon the format and data rate of the programming source.*
DAVIC Reverse Path Data Transmitter	Allows IP-based, real-time, two-way communication between the Explorer 8240 Series DVR and the cable service provider's headend Supports interactive services such as xOD (anything-On-Demand), VOD (video-on-demand), and SVOD (subscription VOD)
MPEG-2 MP@ML Standard Definition Digital Video Decompression	Allows decompression and presentation of audio and video Delivers up to 720 x 480i video resolution
Dual Digital Service Tuners (True Picture-In-Picture)	Allows MPEG-2 digital channels to be tuned and displayed Allows two programs to be displayed simultaneously using the PIP function
Dolby® Digital Audio and MPEG-1 Audio Support	Supports digital audio decoding of two-channel MPEG-1 Layers I & II and Dolby Digital with up to 5.1 channels of multi-channel surround sound. Also downmix multi-channel Dolby Digital programs to surround-compatible left/right outputs.
PowerKEY®Conditional Access System	Provides digital security using an RSA encryption algorithm that mathematically matches pairs of keys Encrypts all recordings on an internal hard disk drive or on an optionally attached external SATA hard disk drive Allows upgrades using a network download
PowerTV® Operating System with HTML Client Engine	Offers a stable operating system and open Application Programming Interfaces (APIs) to support native applications and third-party middleware applications
Enhanced Graphics Engine	Displays up to 65,000 colors simultaneously Enables high-resolution 640 x 480 IPG graphics while simultaneously scaling MPEG-2 video
Powerful 32-bit RISC Processors	Features two 250-MHz (500 MIPs total) processors to perform tasks and launch applications quickly
Over 96 MB Total Memory	Flash: 512 KB Applications DRAM: 64 MB Media DRAM: 16 MB MPEG encoding: 16 MB of DRAM NVM: 8 KB
64 and 256 ITU J.83 Annex B QAM Support	Supports open standards for QAM delivery and demodulation
Both Internal Security Microprocessor and Smart Card Slot	Provides hardware-assisted conditional access options with capability to upgrade the security, if ever needed

Explorer® 8240™ Digital-Only DVR for Standard, HD, and Multi-Room™ Capabilities

Base SD Model Features, continued	Description
Macrovision® Copy Protection Support (licensing fee required to activate)	Activation allows cable service providers to add another layer of copy protection software, called Macrovision, that restricts unauthorized subscribers from making analog copies of digital transmissions, such as VOD and SVOD
BTSC Encoder	Provides stereo sound on the RF coaxial output
Coaxial Digital Audio Output	Supports coaxial interconnection with surround sound receivers
Baseband Audio/Video Outputs	Offers a baseband audio/video connection to a VCR or TV
RF Cable Out	Offers a composite audio/video connection to a VCR or TV
Provision for Name Branding	Allows you to brand the Explorer 8240 series DVR with your company name and logo
External SATA Connector	External Serial ATA (eSATA) connector provides a high-bandwidth connection to an External SATA hard disk drive for expanded storage space for recorded programs
Universal Serial Bus (USB) Port (will require a software enhancement download when available)	Front panel USB port for easy-to-access connection with home consumer devices such as USB keyboards
Optional DOCSIS® 1.0 cable modem	The internal DOCSIS 1.0 cable modem implements the Baseline Privacy Interface and DOCSIS SNMP MIBs. The upstream transmitter is able to send QPSK and 16-QAM bursts to any headend CMTS that implements DOCSIS 1.0 or DOCSIS 1.1 specifications.

8240 Series Dimensions

Dimensions (all 8240 models)	Description
Product Dimensions (WxDxH)	15.60 in. x 11.20 in. x 3.25 in. (39.7 cm x 28.5 cm x 8.3 cm)
Product Weight	8.3 lbs (3.8 kg)
Carton Dimensions (WxDxH)	18.00 in. x 14.00 in. x 6.12 in. (45.8 cm x 35.6 cm x 15.6 cm)
Weight Including Packaging	11.6 lbs (5.3 kg)

8240 Series Temperature Range and Placement

Room Temperature (Operating)*	40°F to 105°F (5C to 40C)

**Locate the 8240 with at least two inches of open space above and on each side*

Explorer® 8240™ [redacted]tal-Only DVR for Standard, HD, and Multi-Room™ Capabilities

8240HD and 8240HD Multi-Room DVR Specifications

Additional HD Model Features	Description
DVR with a 160 GB Hard Drive (Larger hard drives are available. Contact your North American marketing manager for more information.)	The 160 GB model allows up to 90 hours* of SD programs or up to 20 hours* of HD programs to be recorded and stored using DVR functions Gives subscribers complete control over watching, pausing, rewinding, replaying, and fast forwarding live programs using the remote control **The total program hours that can be stored depends upon the format and data rate of the programming source.*
Component HDTV Outputs	Provides YPbPr outputs for quick and easy connection to most HDTV sets
YPbPr and Audio Left/Right Cable Kit	Provides connection from the HD analog video and audio outputs to the HDTV set
Optical Digital Audio Output	Supports optical interconnection with surround sound receivers
MPEG-2 MP@HL High Definition Digital Video Decompression	Allows decompression and presentation of audio and video Delivers the following video resolutions: 1920 x 1080i 720 x 480p 1280 x 720p 720 x 480i
HDMI 1.0 Digital Audio/Video Output with HDCP Copy Protection	The High Definition Multimedia Interface (HDMI) provides uncompressed digital video and audio quality in a simple, user-friendly connector. HDMI, combined with HDCP (High-Bandwidth Digital Content Protection) provides the optimal, secure connection to an HDTV set that supports the HDMI with HDCP interface. HDMI is backward compatible with the DVI 1.0 with HDCP video interfaces on earlier versions of HDTVs.
Over 112 MB Total Memory	Flash: 512 KB Applications DRAM: 64 MB Media DRAM: 32 MB MPEG encoding: 16 MB of DRAM NVM: 8 KB
Dual IEEE 1394 Digital Outputs with Digital Transmission Content Protection (DTCP) (will require a software enhancement download when available)	Dual IEEE 1394 outputs with DTCP will provide a 400-Mbps interconnection to digital display devices (HDTVs)

Explorer® 8240™ [redacted]tal-Only DVR for Standard, HD, and Multi-Room™ Capabilities

Ordering Information

Contact your Sales Representative for product availability in your area.

Part Number	Description
4010040	Explorer 8240 Digital-Only DVR with 80GB hard drive
4010036	Explorer 8240HD Digital-Only DVR with 160GB hard drive, HDMI, and Dual IEEE-1394 Ports
TBD	Explorer 8240HD Multi-Room Digital-Only DVR with 160GB hard drive, HDMI, and Dual IEEE-1394 Ports
752351	DVR Software License (line item on Explorer 8240 DVR Purchase Order)
4007961	Multi-Room DVR Software License (line item on 8240HD Multi-Room DVR Purchase Order)
4006369	AllTouch® 8550 Universal Remote Control
1002048	HDMI to HDMI Cable
1002056	HDMI to DVI Cable (for use in connecting the HDMI port to older, DVI equipped HDTVs)
4000633	Scientific-Atlanta Resident Application (SARA) DVR Software Installation CD (only order one CD for each headend)
4004725	4-Port Splitter Isolation Module (SIM) (required for MR-DVR installations). For more information refer to the *Passive Splitter Isolation Module* datasheet, part number 7001717.
749790	RGB adaptor and cables (for adapting Explorer HD set-tops to HDTV sets that are equipped with only RGB-type inputs) For more information refer to the *RGB Adapter and Cables* datasheet, part number 752184.

Scientific Atlanta

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DOCSIS is a registered trademark of Cable Television Laboratories, Inc

Dolby is a registered trademark of Dolby Laboratories.

HDMI, the HDMI logo, and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.

Macrovision is a registered trademark of Macrovision Corp.

Specifications and product availability are subject to change without notice.

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Scientific-Atlanta, Inc.
1-800-722-2009 or 770-236-6900
www.scientificatlanta.com

Part Number 7007202 Rev A
July 2005

Scientific Atlanta
A CISCO COMPANY

Explorer®
Digital Video Recorder
User's Guide

Get More Out of Your TV...

Watch	• Your favorite shows *anytime* you want...on your schedule • Pause live TV for up to 1 hour without missing a minute
Record	• Two live programs at the same time • All future episodes of your favorite programs by performing a simple, one-time setup
Watch & Record	• Watch one program while recording another • Watch two programs at once (using the PIP feature) and record one of them • Watch a pre-recorded program while recording one or two other programs
Play Back Recordings on Other TVs	• Use the Multi-Room™ DVR* system to play back recordings on up to 4 TVs at the same time • Each room can either play back the same recording or different recordings, and each room has individual control of the play back

**The Multi-Room DVR feature is only available on the Explorer® 8300™ Multi-Room DVR models.*

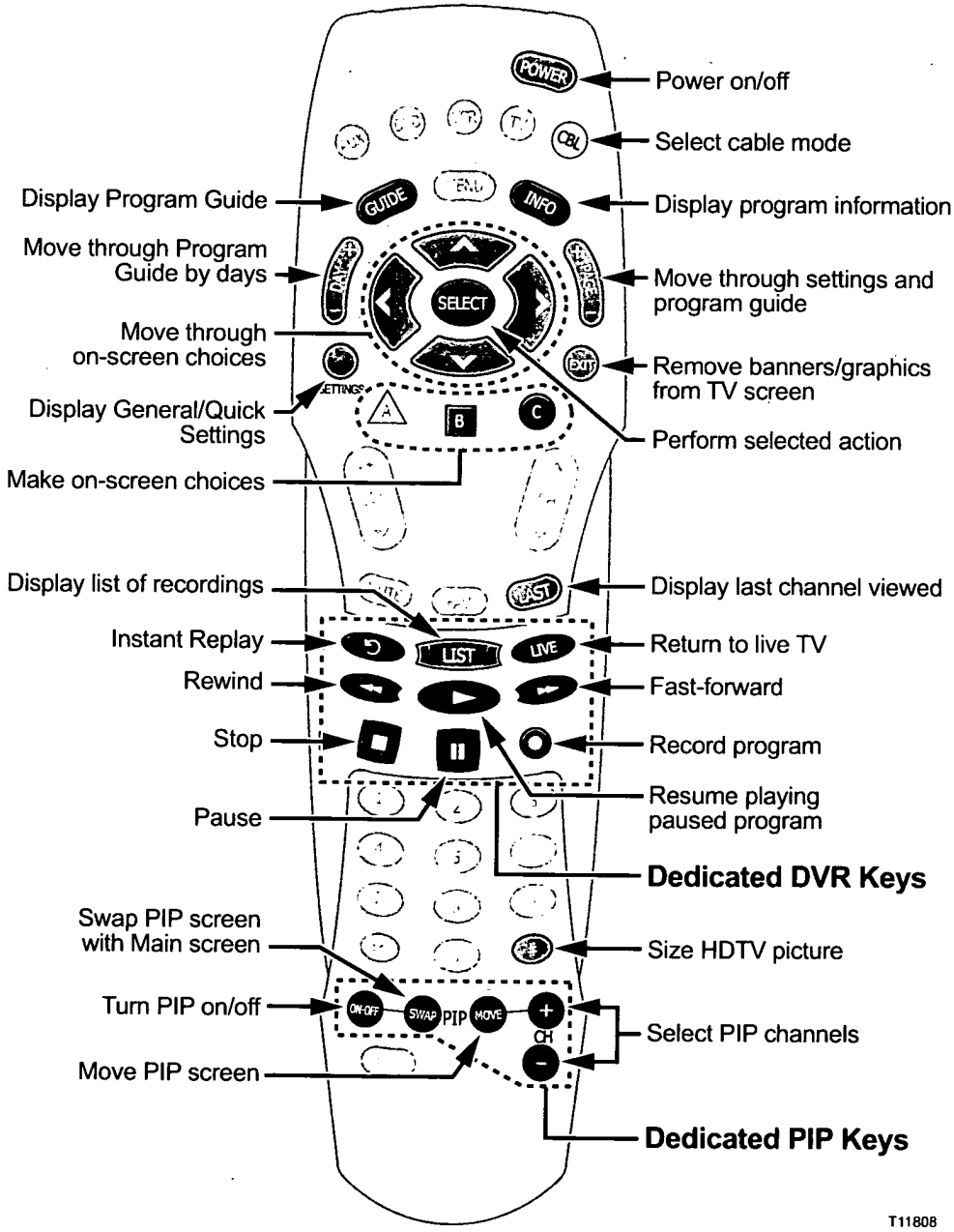
AllTouch Remote Control

The AllTouch® Remote Control includes specific keys that enable you to control your Explorer® Digital Video Recorder (DVR).

IMPORTANT! You must place the remote control in *cable mode* (press CBL) to access the DVR features.

For descriptions of other remote control key functions, refer to the user's guide for your remote control model.

The following illustration shows the AT8550™ All Touch Remote Control. Your remote control model may vary.



Notice for CATV Installers

The servicing instructions in this notice are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions, unless you are qualified to do so.

Note to System Installer (U.S.A. and Canada Only)

This reminder is provided to call the system installer's attention to Article 820-93 and Article 820-100 of the NEC (Canadian Electrical Code Part 1), that provide guidelines for proper grounding and, in particular, specify that the metallic sheath of communications cables shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

This symbol is intended to alert you that uninsulated voltage within this product may have sufficient magnitude to cause electric shock.Therefore, it is dangerous to make any kind of contact with any inside part of this product.

Ce symbole a pour but d'alerter toute personne qu'un contact avec une pièce interne de ce produit, sous tension et non isolée, pourrait être suffisant pour provoquer un choc électrique. Il est donc dangereux d'être en contact avec toute pièce interne de ce produit.

CAUTION: To reduce the risk of electric shock, do not remove cover (or back). No user-serviceable parts inside. Refer servicing to qualified service personnel.

WARNING
TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

This symbol is intended to alert you of the presence of important operating andmaintenance (servicing) instructions in the literature accompanying this product.

Ce symbole a pour but de vous avertir qu'une documentation importante sur le fonctionnement et l'entretien accompagne ce produit.

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Safety First

Before using the DVR, read the IMPORTANT SAFETY INSTRUCTIONS section of your DVR connectivity guide.

U.S. Patents List

A patent notice is affixed to this product. In addition, the product may also be covered by one or more of the following patents:

4,498,169; 4,636,852; 4,641,181; 4,651,208; 4,691,353; 4,692,919; 4,698,598; 4,719,642; 4,748,667; 4,829,569; 4,866,770; 4,885,775; 4,888,799; 4,890,319; 4,922,456; 4,922,532; 4,924,498; 4,965,534; 4,991,011; 5,003,384; 5,012,510; 5,029,207; 5,045,816; 5,053,883; 5,054,071; 5,058,160; 5,142,575; 5,142,690; 5,146,526; 5,155,590; 5,214,390; 5,225,902; 5,225,925; 5,235,619; 5,237,610; 5,239,540; 5,241,610; 5,247,364; 5,255,086; 5,257,403; 5,267,071; 5,270,809; 5,271,041; 5,272,752; 5,282,028; 5,285,497; 5,287,351; 5,301,028; 5,309,514; 5,317,391; 5,319,709; 5,341,425; 5,347,388; 5,347,389; 5,357,276; 5,359,601; 5,361,156; 5,367,571; 5,379,141; 5,379,145; 5,381,481; 5,390,337; 5,400,401; 5,406,558; 5,418,782; 5,420,866; 5,420,923; 5,425,101; 5,428,404; 5,430,568; 5,434,610; 5,436,749; 5,438,370; 5,440,632; 5,442,472; 5,455,570; 5,457,701; 5,471,492; 5,477,199; 5,477,262; 5,477,370; 5,481,389; 5,481,542; 5,485,221; 5,493,339; 5,497,187; 5,500,758; 5,502,499; 5,506,904; 5,519,780; 5,539,822; 5,550,825; 5,579,055; 5,579,057; 5,583,562; 5,592,551; 5,596,606; 5,600,378; 5,602,933; 5,640,388; 5,657,414; 5,675,575; 5,684,876; 5,715,515; 5,724,525; 5,740,300; 5,742,677; 5,754,940; 5,757,416; 5,771,064; 5,774,859; 5,825,829; 5,826,167; 5,850,305; 5,854,703; 5,870,474; 5,892,607; 5,920,626; 5,923,755; 5,930,024; 5,930,515; 5,937,067; 5,963,352; 5,966,163; 5,982,424; 5,991,139; 5,999,207; 6,005,631; 6,005,938; 6,016,163; 6,028,941; 6,029,046; 6,052,384; 6,055,244; 6,072,532; 6,105,134; 6,148,039; 6,157,719; 6,188,729; 6,195,389; 6,212,278; 6,215,530; 6,219,358; 6,240,103; 6,243,145; 6,246,767; 6,252,964; 6,272,226; 6,292,081; 6,292,568; 6,320,131; 6,374,275; 6,405,239; 6,411,602; 6,417,949; 6,424,714; 6,424,717; 6,433,906; 6,438,139; 6,463,586; 6,467,091; 6,476,878; 6,493,876; 6,510,519; 6,516,002; 6,516,412; 6,526,508; 6,538,595; 6,546,013; 6,560,340; 6,567,118; 6,570,888; 6,622,308; 6,629,227; 6,664,984; 6,667,994; 6,671,879; 6,674,967; 6,678,891; 6,714,598; 6,721,352; 6,721,956; 6,725,459; 6,738,982; 6,744,892; 6,744,967; 6,751,271; 6,760,918; 6,795,972; 6,802,077; 6,804,708; 6,811,447; 6,817,028; 6,822,972; 6,823,385; 6,832,386; 6,845,106; 6,868,473; 6,874,075; 6,889,191; 6,909,471; 6,917,622; 6,917,628; 6,922,412; 6,927,806; 6,928,656; 6,931,058; 6,937,729; 6,969,279; 6,971,008; 6,971,121; 6,978,310; D348065; D354959; D359737; D363932; D390217; D434753; D507240; D507535; RE36368; RE36988

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Get Started

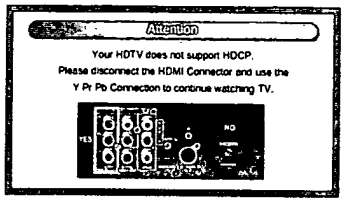
Determine TV Connections.
Determine the types of connections you need to make, based on your TV type (high-definition [HDTV] or standard-definition [SDTV] TV) and home theater connection requirements. Refer to the manual that came with your TV for more information.

Connect the DVR.
If your service provider has not already installed and connected the DVR for you, connect the DVR to your TV based on the connection information described in "Connect the Explorer DVR to Your TV," next in this guide.

Configure the Picture Display.
Configure the picture display for your TV using the Setup Wizard. See "Prepare the Explorer HD DVR to Work With Your TV" on page 3.

Connect the Explorer DVR to Your TV

The DVR family supports a number of connection options to support connections to many types of TVs. The following table describes the available DVR outputs, and includes when the output should be used. For more information about connectivity requirements and connection diagrams, refer to the connection guide for your DVR model, the user's guide for your TV, the Explorer eClub (see "Online Documentation or the Explorer eClub" on page 34), or contact your service provider.

Output Type	Description
HDMI *OR* DVI	Some HDTVs have a High-Definition Multimedia Interface (HDMI™) or Digital Visual Interface (DVI) connector. The HDMI connector provides both a digital video and audio connection. The DVI connector provides a digital video connection, but not a digital audio connection. **Notes:** • To connect the DVR with a DVI connector to a TV with an HDMI connector requires an adapter and a separate audio connection. • When using the HDMI connection with TVs, you need to complete additional configuration steps. For more information, see "Important Note Regarding the HDMI Interface on the 8300HD/8300HDC" on the next page. • If you connect to an HDTV using the DVI or HDMI ports, the DVR is automatically placed in "HD" mode.
	**IMPORTANT!** Your service provider may have High-Bandwidth Digital Copy Protection (HDCP) activated for your area. If HDCP is activated for your area, and you connect the HDMI (DVI) output cable to an HDTV that does not support HDCP, a message appears, instructing you to disconnect the HDMI connection and watch video output through the PrPbY component connectors.
Pr Pb VIDEO Y/V	You can use the PrPbY ports, or component outputs, with either an HDTV or a non-HDTV with component inputs. If connecting to a TV using component outputs, you must use the Setup Wizard to select the output formats that your particular TV supports. See "Prepare the Explorer HD DVR to Work With Your TV" on page 3.
Pr Pb VIDEO Y/V	You can use the Y Output (on an HD unit configured for SD operation) or TV Video Output connector for connecting to an SDTV. If you do not see video using this connection, see "Prepare the Explorer HD DVR to Work With Your TV" on page 3.
S-VIDEO OUT *OR* CABLE OUT	You can use these connections to connect the DVR to an SDTV. If you use the Cable Out connector, you must tune your TV to the correct channel (typically either channel 3 or channel 4). Contact your service provider for more information.
1394	**(OPTIONAL)** Some HDTVs have 1394 connectors. If you connect the DVR to your HDTV using 1394, you also need to connect separate video and audio connections to your HDTV.

Connect the Explorer DVR to Your TV, Continued

Important Note Regarding the HDMI Interface on the 8300HD/8300HDC

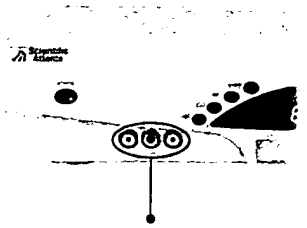
The HDMI interface automatically configures the audio output for a format supported by the TV attached to the DVR through the HDMI connection. This automatic configuration is only performed the first time the DVR is connected through the HDMI interface to a compatible TV. When the automated process is finished, the DVR sets the audio output format to either Dolby® Digital or Other (Linear PCM). The selected format is provided to all digital outputs. As a result, if the TV does not support Dolby Digital decoding, you may need to override the automatic setting to provide Dolby-formatted content to a Home Theater Receiver connected to the digital output on the DVR. In addition, if the DVR is connected to a different TV, you may need to manually set the output to a format that the new TV supports.

To override the automatic configuration or to change the audio output format used on the HDMI interface, complete the following steps:

1. Press SETTINGS twice. The General Settings menu appears.
2. Press ◁ or ▷ to select **Audio: Digital Out**.
3. Press ⟨⟩ to select **Dolby Digital**. This setting sends Dolby Digital audio to the HDMI, DIGITAL AUDIO OUT, and OPTICAL AUDIO OUT connectors.
4. Press A to accept the option for the DVR.
5. Press EXIT to return to normal viewing.

Note: If you set the audio output to a format that the TV does support, you will not get any audio through the TV. You will either need to listen with a secondary device such as a Home Theater Receiver or manually switch the configuration back to one supported by the TV to hear the audio for the program using the TV speakers.

Connect External Devices to the DVR



Example of front panel Audio/ Video Inputs on an 8300 DVR

Do you have an external device, such as a VCR, camcorder, or video game device but no Audio/Video Input connectors on your TV for easy connectivity? Connect the external device to your DVR instead!

- On 8300-series DVRs, the DVR front panel has Audio and Video Input connectors that allow you to connect to the video and left/right (L/R) audio outputs of an external device to deliver the audio and video to your TV.
- On 8000-series DVRs, the Audio and Video Input connectors are located on the rear panel of the DVR.

After you connect the external device to your DVR, press the **Video Source** key on your remote to switch between the external device (Auxiliary) and your DVR. When you switch to the Auxiliary device, an on-screen banner briefly displays "Video Source: Auxiliary." When you press the **Video Source** key to switch back to the DVR device, the currently tuned channel is displayed.

Note: The on-screen content of the external device cannot be copied to your DVR hard drive.

Prepare the Explorer HD DVR to Work With Your TV

The Setup Wizard is a program that helps you set up your DVR to provide the best picture quality that your TV supports. Based on the type of TV you have, the Wizard allows you to select all picture formats supported by your SDTV or HDTV.

Note: If you are connecting an SD DVR to an SDTV, no setup is required. Skip this section and go to "Set Parental Control" on page 7.

IMPORTANT! Any time that you change connections on your DVR, you must run the Setup Wizard again to make sure your TV is receiving its supported picture formats. This rule does not apply if you are using 1394 connectors.

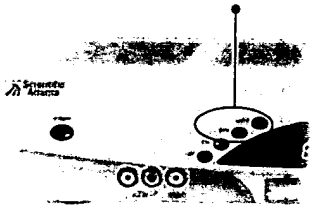
Start the Setup Wizard

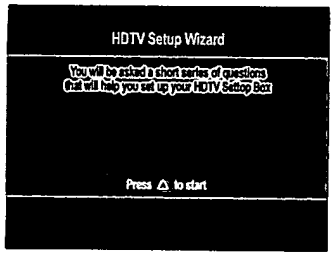
1. Press CBL on your remote to place the remote in cable mode.
   Note: For more information about preparing the remote to work with your make and model of TV, refer to the user's guide for your remote model.
2. Make sure that the DVR is powered **OFF**, but still plugged into an active power outlet, and properly connected to the TV. See "Connect the Explorer DVR to Your TV" on page 1.
3. Turn the TV **ON**.
4. Configure the TV to display the input where the DVR is connected (see the user's guide for your TV for more information).
5. With the DVR powered **OFF**, press **Guide** and **Info** on the DVR front panel at the same time. The **TV Connection Set-up** screen appears (within 20 seconds).
   Notes:
   - The **TV Connection Set-up** screen toggles between an HD and SD mode selection screen until you make a selection. If you do not see video within 30 seconds, check your connections and TV settings.
   - The DVR front panel displays either **HD** or **SD** while the TV Connection Set-up screen toggles between HD and SD mode.
6. Choose one of the following options:
   - To choose HD mode, press B on the remote to start the setup.
   - To choose SD mode, press A on the remote to start the setup.

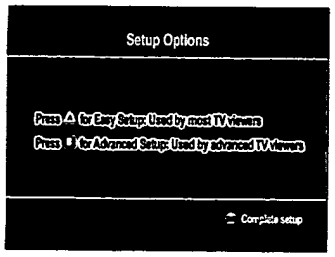
   Note: If you are connected to your HDTV using the component ports and you incorrectly select "SD" mode, your video may appear pink in color.
7. Choose one of the following options:
   - If you selected SD mode in step 6, a Setup Complete screen appears. You're ready to begin using your DVR to watch and record programs. You may skip the rest of this section and go to "Set Parental Control" on page 7.
   - If you selected HD mode, the **HDTV Setup Wizard** screen appears.

     Press A to continue the setup.
8. Choose one of the following options from the **Setup Options** screen:
   - To choose the **Easy Setup** option, press A; then, go to the **Easy Setup Instructions** on page 4.
   - To choose the **Advanced Setup** option, press B; then, go to the **Advanced Setup Instructions** on page 4.

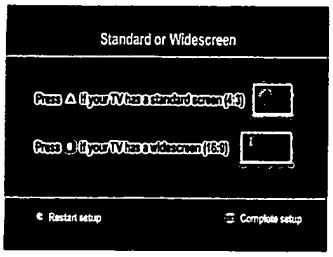
Press the **Guide** and **Info** buttons at the same time







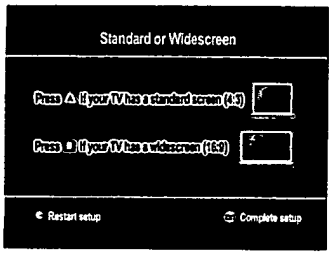
PREPARE THE EXPLORER HD DVR TO WORK WITH YOUR TV, CONTINUED

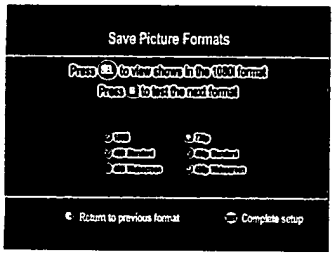


EASY SETUP INSTRUCTIONS

1. Press A or B to select the type of TV screen you have. The setup is complete.
2. Press POWER to begin watching TV.
   Notes:
   - If you pressed A for the standard screen (4:3) TV setting, the TV is set to receive programming in 480i format on non-HD channels and 1080i format on HD channels.
   - If you pressed B for the widescreen (16:9) setting, the TV is set to only receive programming in 1080i format (even on non-HD channels).
3. You are ready to begin using your DVR to watch and record programs. Go to "Set Parental Control" on page 7.
   Note: If you need to change your HDTV picture display, go to "Adjust Your HDTV Picture" on page 5.

Tip: After you complete the setup, press ⊕ to stretch or zoom the picture.





ADVANCED SETUP INSTRUCTIONS

Note: Refer to the user's guide that came with your TV for information about the display formats your TV supports.

1. Press A or B to select the type of TV screen you have and display an Instructions screen.
2. The Instructions screen tells you that various picture formats will be displayed for your selection.
3. *Before you begin selecting picture formats,* read the following:
   IMPORTANT! If you see a black screen or if the picture quality is not optimal, *do not* press SELECT. Press B again to view the next screen format.
4. Follow the on-screen instructions to select your picture formats.
5. Press SELECT to toggle between the Save and Remove options, or press B to see how the next format looks on your TV screen.
6. After finding the best picture format, press DVR. The setup is complete.
7. Press POWER to begin watching TV.
8. You are ready to begin using your DVR to watch and record programs. Go to "Set Parental Control" on page 7.
   Note: If you need to change your HDTV picture display, go to "Adjust Your HDTV Picture" on page 5.

Tip: After you complete the setup, press ⊕ to stretch or zoom the picture.

Adjust Your HDTV Picture

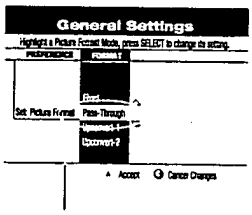
Picture Formats and Your HDTV Display

The following table shows the relationship between the picture format method, the signal the DVR receives, and the format of the picture that displays on your TV screen.

If you chose this picture format method:	And the DVR receives this signal:	The HDTV displays the picture in this format:
Fixed	1080i, 720p, 480i, 480p	Picture format selected in the Quick Settings menu
Pass-Through or **Auto-DVI**	1080 720p 480i 480p	1080i 720p 480i 480p
Upconvert 1	480i/480p 720p/1080i	480p 1080i
Upconvert 2	480i/480p 720p/1080i	480p 720p

General Settings: Set Picture Format

Upconvert 1 and Upconvert 2 - When possible, the DVR tries to improve the program display by taking an SD picture and changing it to a simulated HD picture (upconverting).
Fixed - All programming is displayed using the picture format you last selected. This setting remains *fixed* until you select a new picture format from the Quick Settings menu.
Pass-Through or Auto DVI - The programming format is not manipulated by the DVR. The DVR passes the signal through to the TV. (See the box on the previous page for more information about Pass-Through.)



If your HDTV uses a DVI or HDMI port, **Auto DVI/HDMI** appears here instead of **Pass-Through**.

⚠ WARNING:

Avoid Screen Burn-In! Do not display the same fixed images on your HDTV screen for extended periods of time. Images such as letterbox bars or side bars, bright closed-captioning backgrounds, station logos, or any other stationary images may cause the picture screen in your HDTV to age unevenly; this is known as screen burn-in. Refer to the user's guide that came with your HDTV for more information.

Change the Darkness of Bars Used in Picture Displays

The DVR automatically adds bars to certain types of program formats to reduce the chance for screen burn-in. If you decide to use these settings to watch programs, you can change the darkness of the bars from Light (default setting) to Medium or Dark.

1. Press SETTINGS twice to access General Settings.
2. Press ▼ or ▲ to select the option **Set: TV Borders**.
3. Press ▶ to display the Borders options (Light, Medium, or Dark).
4. Press ▼ or ▲ to select the shade you want to apply to the bars (Light, Medium, or Dark).
5. Press A to accept the setting. The DVR displays the Set: TV Borders option with your selection shown.
6. To exit from this screen and return to live TV, press EXIT.

After using the Setup Wizard, if you want to change your picture preferences, you can adjust the HDTV picture display using options within the Quick Settings and General Settings menus.

If you do not need to change your picture quality, skip this section and go to "Set Parental Control" on page 7.

Note: The picture format is tied to the content provider's format and the picture formats supported by your TV.

ADJUST YOUR PICTURE FORMAT USING QUICK SETTINGS

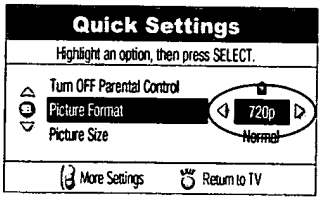
Because the picture quality of a program is affected by many factors, such as how the program was originally recorded and the method used to broadcast the program, you may find that displaying certain programs in a specific picture format provides the picture quality you prefer.

Note: If your HDTV uses a composite, DVI, or HDMI port, it automatically selects the best picture format for the program you are watching. DVI ports, however, can choose only from the picture formats that your HDTV supports.

1. Press SETTINGS to access Quick Settings.
2. Press ▲ or ▼ to select **Picture Format**.
3. Press ◀ to select the picture format setting.
4. Press ◀ again to display another picture format setting. Each time you press ◀, another setting displays.

   Note: If you used the Setup Wizard to select picture format settings and your General Setting is not set to Pass-Through, the picture format settings that you selected are available here. For example, if you used the Easy Setup method in the Setup Wizard, only the settings 480i and 1080i are available for you to select.
5. Press SELECT to view the picture with this setting.
6. If necessary, repeat these steps to find a setting that you prefer.

Note: If you select **Pass-Through** or **Auto DVI/HDMI** in the **General Settings: Set Picture Format**, you cannot change the Picture Format in the Quick Settings menu (the Picture Format option will not be shown). You can only stretch and zoom the picture with the # key on the remote *or* within Quick Settings.



Pass-Through means that the DVR does not change the active signal it receives. It is just passing the signal through to the TV. Changing the picture format in **General Settings: Set Picture Format** to **Fixed** lets you "fix" or adjust the format in Quick Settings.

ADJUST YOUR HD PICTURE USING GENERAL SETTINGS

You can adjust how your DVR displays pictures using the Picture Format and TV Borders General Settings menu options.

SET YOUR DEFAULT PICTURE FORMAT

By automating picture adjustments, the DVR uses a method that you choose to automatically select the picture format that provides the best display possible. The methods that you can select from depend partly on the type of video connection your HDTV uses.

1. Press SETTINGS twice to access General Settings.
2. Press ▲ or ▼ to select **Set: Picture Format**.
3. Press ◀ to select the picture format setting.
4. Press ▲ or ▼ to display each option.

   Note: See the "General Settings: Set Picture Format" box on the next page for an explanation of each option.
5. Press A to accept the option for the DVR.

   Note: The Explorer 8300™ DVR (8300) front panel displays the selected option and scan rate. For example, if you selected Pass-Through, the 8300 front panel displays **AUTO**.
6. Press EXIT to return to normal viewing.

Set Parental Control

Notes:

- This section covers the basics for setting up parental control and blocking programs. You can also use parental controls to block recordings on your DVR. For more information, see **Block Recordings With Parental Control** on page 9.
- If you do not want to configure parental control and blocking, skip this section and go to **Search for Programs Using the Program Guide** on page 10.

Creating or Changing a PIN

1. Using the remote, press SETTINGS twice to access General Settings.
2. Press ◁▷ or ◁▷ to select **Block: PIN**.
3. What is the current setting for Block: PIN?
   - If **Enabled** and you do not know the PIN, contact your service provider to determine the default PIN, and then go to step 4.
   - If **Disabled**, press SELECT, press A, and then go to step 7.

   IMPORTANT! The PIN must be *Enabled* for the Parental Control feature to work.
4. After receiving the default PIN, press SELECT.
5. Press ◁▷ or ◁▷ to select **Change** and then press A.
6. When prompted, enter the 4-digit PIN given to you by your service provider.
7. When prompted, enter a new 4-digit PIN.
8. Enter your new 4-digit PIN again for confirmation.
9. Press SETTINGS to exit General Settings.

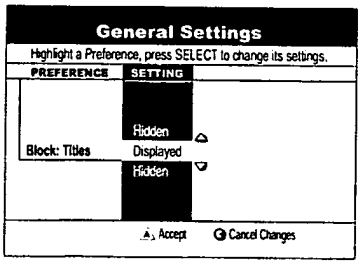
Blocking Symbols

Indicates that a recording or program is blocked

Indicates that a recording or program is not blocked

Blocking Channels, Ratings, and Program Times

1. Using the remote, press SETTINGS twice to access General Settings.
2. When prompted, enter a PIN and then re-enter it to ensure accuracy.
3. Press ◁▷ or ◁▷ and select one of the following options:
   - **Block: Channels**—to block all programs on a specific channel
   - **Block: Rating**—to block all programs according to program ratings
   - **Block: Time New**—to block all programs broadcast during a specific time
4. Press SELECT and enter your 4-digit PIN when prompted.
5. Follow the on-screen instructions to block channels, ratings, or time slots.
   Note: The DVR will record the blocked programs, but the DVR blocks the playback of the recording unless you enter a valid PIN.
6. Press SETTINGS to exit General Settings.



Hiding or Viewing Blocked Program Titles

You can prevent the DVR from displaying the titles of blocked programs on the program guide and in the DVR Recorded and Scheduled lists.

1. Using the remote, press SETTINGS twice to access General Settings.
2. Press **Move Up** ◁▷ or **Move Down** ◁▷ to select **Block: Titles**.
3. Press **Select** SELECT to set the Block: Titles setting to either **Hidden** or **Displayed**.
4. Press A to accept your changes.
5. Press SETTINGS to exit General Settings.

Unblocking the Current Channel

1. Using the remote, press SETTINGS to access Quick Settings.
2. Press **Move Up** ◁▷ or **Move Down** ◁▷ to select **Unblock this Channel**.
3. Press **Select** SELECT to change the Parental Control setting.
4. When prompted, enter your 4-digit PIN.

Set Parental Control, Continued

Turning On and Off Parental Control

1. Using the remote, press SETTINGS to access Quick Settings.
2. Press ◁ or ▷ to select **Turn ON Parental Control** or **Turn OFF Parental Control**, respectively.
3. Press SELECT to change the Parental Control setting.
4. When prompted, enter your 4-digit PIN.

Tip: Turning off the DVR and turning it back on by pressing the **Power** button on the DVR (or by pressing POWER on the remote) is an easy way to turn on Parental Control for all the programming you have chosen to block.

Program Rating Categories

The following list describes the rating categories and codes associated with movies and television programs in the United States.

TVY The program is appropriate for children of all ages, and specifically designed for children ages 2 through 6 years.

TVY7 The program is appropriate for children age 7 years or older. This rating can include the code FV, indicating mild fantasy or comedy violence.

G, TVG The program is appropriate for viewers of all ages.

PG, TVPG Parental guidance is suggested. The program contains material that parents can find unsuitable for young children. This rating can also include the following codes:

- V - Some violence
- S - Some sexual situations

PG-13 Parental guidance is suggested. Parents can find some program material unsuitable for children under 13 years. Additional codes may be included with the rating.

TV14 Parents are strongly cautioned as some program material may be unsuitable for children under 14 years. This rating can also include the following codes:

- V - Intense violence
- S - Intense sexual situations
- L - Strong indecent language
- D - Suggestive dialog

TVMA Mature audience. The program is designed for an adult audience. Parents can find the program material unsuitable for children under 17 years. This rating can also include the following codes:

- V - Graphic violence
- S - Explicit sexual situations
- L - Crude or indecent language

R Restricted to adult audiences only. The program contains material unsuitable for children.

NC17 Under 18 never admitted. The program or movie is considered too adult (containing violence, sex, or drug use) for viewers under 17.

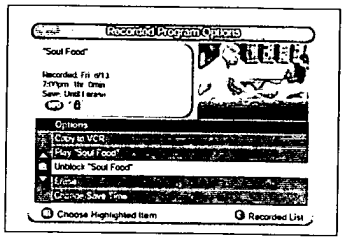
NR This program or movie is not rated.

NR-Adult No one under age 17 permitted. This program or movie is not rated (NR) but is considered too adult (containing violence, sex, or drug use) for viewers under 17.

Block Recordings with Parental Control

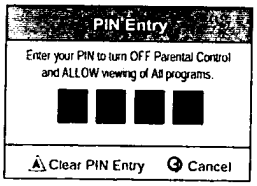
You can keep others from watching a recording by using the Block feature. This feature is useful if children also use the DVR and you do not want them to watch certain recordings.

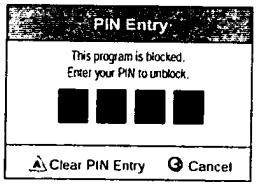
Note: To block a program that is scheduled to be recorded, block the program rating from the General Settings menu. (For details, see "Blocking Channels, Ratings, and Program Times" on page 7.) The DVR records the program, but the recording can be watched only after entering your 4-digit Parental Blocking PIN.



1. Press LIST to access the Recorded List.
2. Press ▲ or ▼ to select the recording you want to block.
3. Press SELECT to access the Recorded Program Options screen.
4. Press ▲ or ▼ to select the "Block [title of program]" option.
5. Press SELECT. The PIN Entry screen appears.
6. Enter your 4-digit PIN. The PIN Entry screen disappears, and 🔒 appears next to the **Info** icon in the Information area of the Recorded List screen. The lock icon indicates that the program is blocked.

Watch Blocked Recordings





Use either of the two methods described here to watch a blocked program.

Note: If the titles of blocked programs are blocked, see "Hiding or Viewing Blocked Titles" on page 7.

1. Press LIST to access the Recorded List.
2. Choose one of the following options:
   - Press ▲ or ▼ to select the "Play [title of program]" option, and then press SELECT. Enter your 4-digit PIN.
     Note: Entering your PIN in this screen allows viewing of *all programs and recordings.*
   - Press ▲ or ▼ to select the "Unblock [title of program]" option, and then press SELECT. Enter your 4-digit PIN.
     Note: Entering your PIN in this screen turns off blocking *only* for this recording.

Set Favorite Channels

1. Using the remote, press SETTINGS twice to access General Settings.
2. Press ▲ or ▼ to scroll to **Viewer: Favorites**.
3. Press SELECT.
4. Press ▲ or ▼ to scroll to the channel you want to mark as a favorite, and then press SELECT.
5. Repeat step 4 to mark other desired channels as favorites.
6. Press A to save your favorite list.
7. Press SETTINGS to exit General Settings.

Accessing Your Favorite Channels

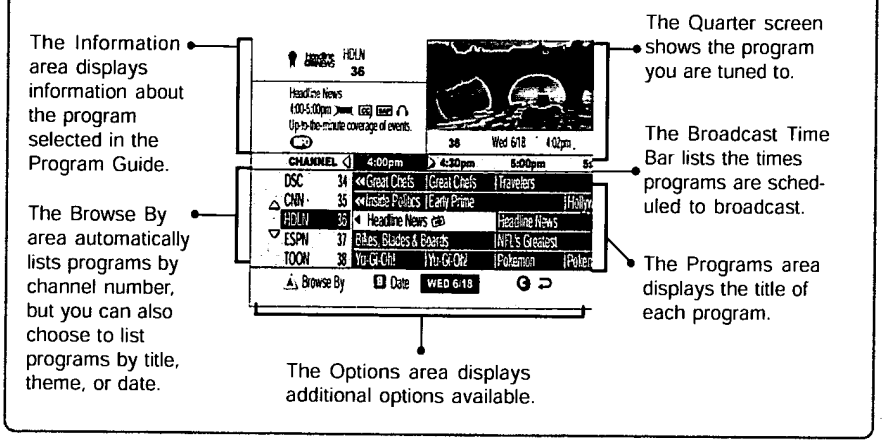
1. Press FAV on the remote to access a channel you have set up as a favorite.
2. Continue pressing FAV until the channel you want to watch appears.

Search for Programs Using the Program Guide

Display the Program Guide

1. Press GUIDE to access the Program Guide.
2. To close the guide, press GUIDE or EXIT. The Program Guide closes and displays the program that was playing in the Quarter screen.

Program Guide



Search for a Program by Channel, Title, or Theme

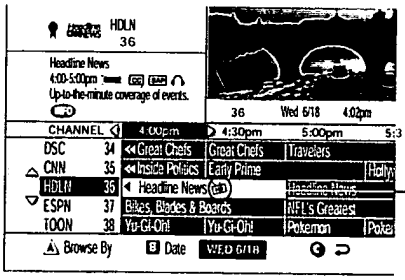
The DVR automatically lists programs by channel number, but you can change this and list programs by title or theme.

1. Press GUIDE to access the Program Guide.
2. Press A. The Browse By area of the Program Guide displays the options: Title, Channel, and Theme.
3. Press ◁ or ▷ to select one of the following options:
   - **Channel**, which lists programs numerically by channel number
   - **Title**, which lists programs alphabetically by program title
   - **Theme**, which lists programs by theme, such as adventure, comedy, sports, or news
4. Press SELECT. The Browse By area of the Program Guide displays the programs according to the option you selected.
5. Press C to return to the previous screen displayed.

Note: The Browse By option only shows programs for the current date. For information about searching on different dates, see "Search for a Program by Date" on page 11.

Search for Programs Using the Program Guide, Continued

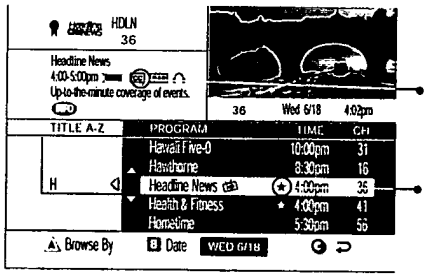
Browse By Options



Browse By Channel

Channel lists programs numerically by channel number.

Note: HD next to a program indicates that the program is a high-definition broadcast.

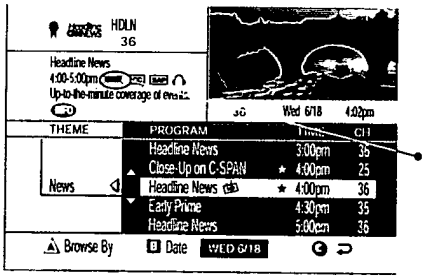


Browse By Title

Title lists programs alphabetically by program title.

Note: The Parental Guide information is listed in the program description.

Note: A star next to a program indicates that the program is currently being broadcast.



Browse By Theme

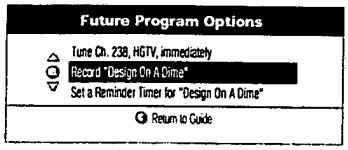
Theme lists programs by theme, such as adventure, comedy, sports, or news.

Note: New next to a program indicates that the program is on for the first time (first-run program).

Search for a Program by Date

1. Press GUIDE to access the Program Guide.
2. Press B. The Browse By area of the Program Guide displays a list of upcoming dates.
3. Press ◁ or ▷ to select a date.
4. Press SELECT. The Program Guide displays the programs scheduled to be broadcast on that date.
5. Press C to return to the previous screen displayed.

Select a Program from the Program Guide



1. Press GUIDE to access the Program Guide.
2. Press the navigation ring to move through the program listings to select the program you want to watch.
3. Press SELECT.
   - If the program is currently on, the Program Guide closes and the program you selected appears in full-screen TV.
   - If the program is scheduled for a future time, the Future Program Options screen appears.
4. Choose one of the following Future Program options:
   - To tune to the future program channel immediately, choose the "Tune [channel number/name], immediately" option.
   - To record the future program, choose the "Record [program name]" option.
   - To set a reminder timer for the future program, choose the "Set Reminder Timer for [program name]" option. When selected, an on-screen banner is displayed 2 minutes prior to the start of the future program to remind you to watch the program.

Tip: When you select a future program in the Program Guide, you may also press REC to bypass the Future Program Options screen and record the future program. See "Record a Program From the Program Guide" on page 16 for instructions.

Control Live TV and Recordings

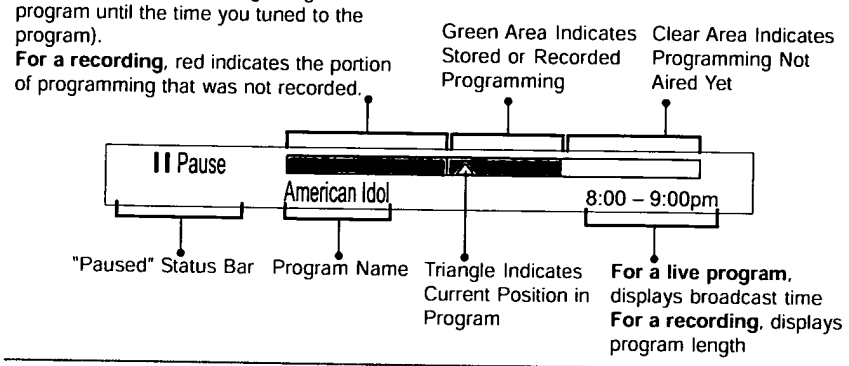
When you tune to a live program, the DVR begins buffering the program — that is, making a temporary recording of it — so that you can:

- Pause the live program for up to one hour
- Rewind the program up to the point when you tuned to the channel
- Fast-forward through the portion you have rewound
- Instantly replay the last eight seconds of TV anytime you want
- Save the buffered program to the DVR by recording it

Status Bar

The **Status Bar** appears when you pause, rewind, or fast-forward a live program or recording.

For a live program, red indicates missed programming (from the beginning of the program until the time you tuned to the program).
For a recording, red indicates the portion of programming that was not recorded.



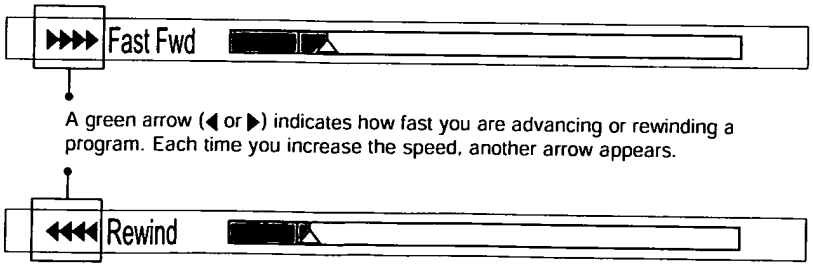
Tip: Some TV programs display "scrolling" information across the bottom of the TV screen (for example, news and sports "tickers"). The DVR on-screen status bar and other graphics may cover up information scrolling on-screen. Press EXIT to remove the status bar and any on-screen DVR graphics or banners.

Pause a Live Program or a Recording

1. Press ⏸. The action freezes and the Status Bar appears briefly in the Pause position at the bottom of the screen. For both recorded and live programs, the DVR remains in pause for up to 1 hour.
2. Press ⏸ again or press ▶ to resume playing the program.

Rewind or Fast-Forward a Live or Recorded Program

1. Make sure that the program or recording is not Paused. If it is paused, press ▶ to resume normal play. If you press ▶ or ◀ while in Pause mode, the program will only advance or rewind one frame.
2. Rewind or fast-forward the buffered program or recording in any of four speeds:
   - The **first press** (◀ or ▶) increases the speed to **4 times** normal speed.
   - The **second press** (◀◀ or ▶▶) increases the speed to **10 times** normal speed.
   - The **third press** (◀◀◀ or ▶▶▶) increases the speed to **32 times** normal speed.
   - The **fourth press** (◀◀◀◀ or ▶▶▶▶) increases the speed to **128 times** normal speed.



3. To resume play at normal speed, press ▶. The **Status Bar** indicates the Play mode and the program plays at normal speed.

USE INSTANT REPLAY

Press ⟲ to watch the last 8 seconds of a live or recorded program again. Every additional press jumps back 8 more seconds.

USE SLOW MOTION

1. While watching live TV or while playing a recording at normal speed, press ▶ once. The action slows.
2. To resume play in normal speed, press ▶ again.

WATCH ACTION FRAME BY FRAME

Analyze sports events and other programs by watching the action frame by frame. When you watch frame by frame, you fast-forward or reverse the action one frame at a time.

1. Press ⏸. The action stops.
2. Fast-forward or reverse action one frame at a time by following these steps.

To Move Action	Press	Result
Back by one frame	◀	Each time you press ◀, action moves backward by one frame.
Forward by one frame	▶	Each time you press ▶, action moves forward by one frame.

3. To resume play at normal speed, press ▶.

Tip: To remove the status bar and any on-screen DVR banners, press EXIT.

CATCH UP WITH A LIVE TV PROGRAM

When you pause or rewind a live program, the program continues to be broadcast. You can continue watching the buffered program (delayed TV), or you can catch up with the live broadcast by pressing LIVE.

Use Picture-In-Picture

Turn PIP On and Off

The PIP feature can only be activated while you are watching TV in full screen mode. You must remove any on-screen menus and exit the program guide to turn the PIP feature on.

When you turn on the PIP feature, you can watch two channels at once. One channel appears as a full-screen image; the other channel appears as a small image within the full-screen image.

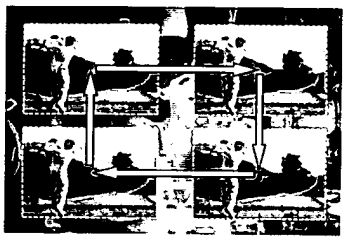
1. While watching a program in full screen mode, press PIP ON/OFF. The PIP screen appears within the full screen, and a channel banner appears briefly under the PIP screen.
   Note: You hear the sound of only the program that is shown in the full screen.
2. To turn off the PIP screen, press PIP ON/OFF again.

Note: If you press INFO when the PIP feature is on, a channel banner appears for both screens. If either program is currently being recorded, its channel banner shows the Recording Now REC symbol.

Tip: The PIP keys are located at the bottom of the remote (see inside the front cover of this guide for an illustration of the remote).

Change the Channel of the PIP Screen

1. If the PIP feature is not on, turn it on by pressing PIP ON/OFF.
2. Press PIP CH + or PIP CH − to change the PIP channel.

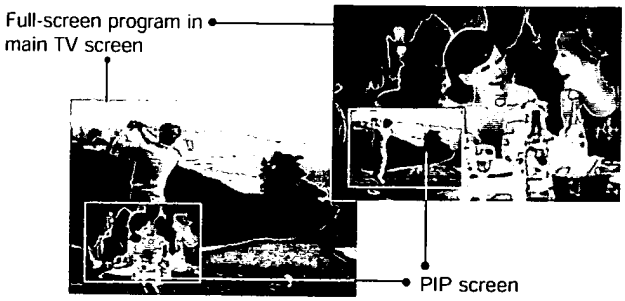


Move the Location of the PIP Screen

Each time you press PIP MOVE, the PIP screen moves clockwise to the next corner of the main TV screen.

Swap the Main Screen and the PIP Screen

Press PIP SWAP to swap the TV program in the PIP screen with the program in the main screen.



Recordings and the PIP Screen

If you are . . .	And you . . .
Recording the program in the main TV screen...	Have the PIP feature on, the recording does not capture the PIP screen in the recording. The recording shows only the program in the main TV screen.
Recording the program in the PIP screen...	Turn off the PIP feature, the program continues to be recorded.
Recording the program in the PIP or the main TV screen...	Press INFO; an information banner appears for both the PIP and main TV screens. If a program is being recorded, REC appears in the channel banner. The recording does not capture the channel banner in the recording.

Record Programs

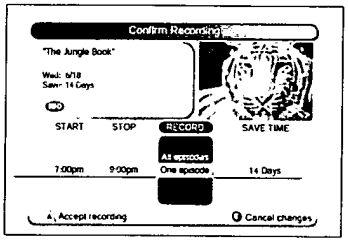
Feel free to do the following without affecting the DVR recording:

- Continue to watch the channel while the recording is being made.
- Pause, fast-forward, or rewind the program.
- Change channels (only if you are recording one program).
- Turn off the TV.
- Turn on the PIP feature.
- Display the Recorded List screen or the Program Guide.
- Playback a recording.

Record a Program You Are Watching

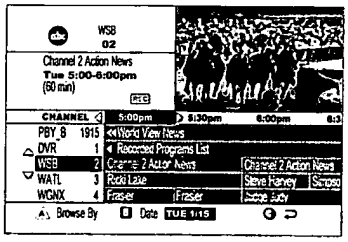
When you press Record while watching a live program, the DVR records all of the current program that you have buffered since you tuned to that channel.

For example, if you tune to a live, 1-hour program at 8:00 p.m., and you press record at 8:40 p.m., the DVR saves the first 40 minutes and continues to record for the next 20 minutes, until the program is scheduled to end.



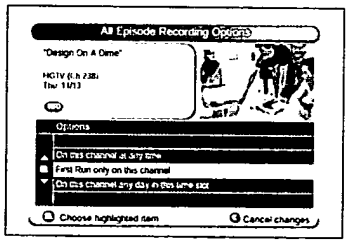
1. Press REC to start recording anytime during the program. The program records from the time that the channel was tuned.
2. In the **Confirm Recording** screen, use the arrow keys to choose your recording options and press A.

Record a Program From the Program Guide



1. Press GUIDE.
2. Press the arrow keys to select a current or future TV program, and then press REC.
3. In the **Confirm Recording** screen, choose your recording options and press A. The program to be recorded is highlighted in red in the Program Guide.

Record Multiple Episodes of a Program



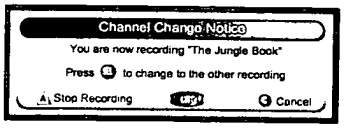
1. Press GUIDE.
2. Press the arrow keys to select a program, and then press REC.
3. In the **Confirm Recording** screen, choose **All Episodes** and press A.
4. In the **All Episode Recording Options** screen, choose one of the following options:
   - **First Run only on this channel**
     Note: This option is subject to availability in your area.
   - **On this channel at any time**
   - **On this channel this day in this time slot**
   - **On this channel any day in this time slot**
     Note: This option records the program any day that the program airs in this time slot.
5. Press SELECT to save your All Episode recording settings and return to the Program Guide to continue watching TV.

Save Latest Options

When scheduling an All Episodes recording, you can choose to save from 1 to 5 of the most recent episodes. Or, you can save every episode until you cancel the recordings or run out of storage space.

For example, you save the two most recent episodes of a program that is broadcast every weeknight. When the DVR records the program on Wednesday, it automatically deletes the Monday program, and the Tuesday and Wednesday recordings are now saved. On Thursday, the Thursday episode is recorded, the Tuesday recording is erased, and so on.

For more information about saving recordings, see "Save Recordings" on page 21 of this guide.



If, while recording two programs, you try to tune to another channel, the DVR displays a Channel Change Notice to let you know that you must stop a recording to change channels. For details, see "Cancel a Recording That Is In Progress" on page 19.

RECORD TWO LIVE PROGRAMS AT ONCE

1. Press REC to record the show that you are watching, and then press A.
2. Tune to the second show you want to record, press REC, and then press A.

Note: When you record two live programs at the same time, you can watch them both while they record using PIP, or you can watch a previously recorded program; but you cannot tune to another channel and watch a third program live.

CONFIRM YOUR RECORDINGS

There are three ways to find channels that are currently being recorded:

- Turn on the PIP feature and press INFO. Both channel banners appear, and the REC symbol is displayed if one or both of the channels are currently recording.
- Press LIST. Use the arrow keys to move through the Recorded List. A program highlighted in red indicates that the program is currently recording.
- Press GUIDE. A program highlighted in red is currently recording or is scheduled to record.

RECORD A PAY-PER-VIEW EVENT

If your service provider allows, you can record pay-per-view (PPV) events. To record a PPV event, follow these steps:

1. Purchase the event *and wait for it to begin playing.*
2. Record the event just like any other live program. For details, see "Record a Program You Are Watching" on the previous page.

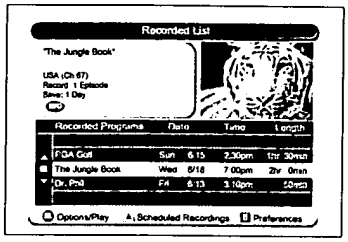
SCHEDULE FUTURE PAY-PER-VIEW RECORDINGS

1. If the Program Guide is not shown, press GUIDE.
2. Use the arrow keys to find the future PPV event you want to record. Press SELECT or press REC to display the Future Programs Option screen.
3. When you press REC, choose from one of the following options:
   - To *buy and record* the event, press A to access the "Buy" window. The Record Confirmation Screen will appear.
   - To *buy the PPV event*, press B to access the "Buy" window.
   - To *exit without purchasing* a future PPV event, press C to return to the Program Guide.

Note: You must have a PPV advertisement window open to purchase a future PPV event.

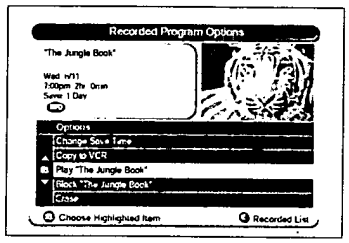
Watch Recordings

Note: If you see **Blocked Title** instead of the title of a program, you are hiding the display of blocked program titles (a parental control function). See "Hiding or Viewing Blocked Program Titles" on page 7 for more information.



Display a List of Your Recorded Programs

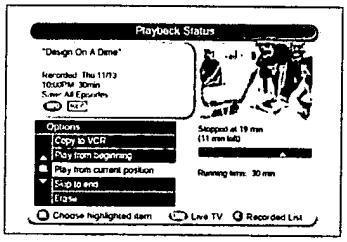
1. Press LIST. Programs that have been recorded, as well as those that are currently being recorded, appear in this list.
   Note: Programs currently being recorded are highlighted in red.
2. To exit from the Recorded List screen and display full-screen TV, press LIST again or press EXIT.



Watch Your Recorded Programs

Play back your recordings whenever you want. You can even record one or two programs live while you play back any program you recorded earlier. However, you can play back only one recording at a time.

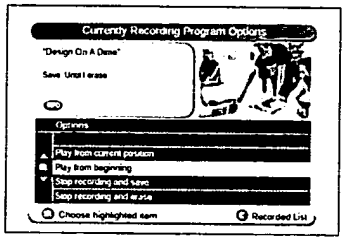
1. Press LIST.
2. Press ▲ or ▼ to select the recording you want to watch.
3. Press SELECT **Options/Play**. If you select the recording that you have most recently watched, the recording begins playing immediately from the scene you last viewed. Otherwise, the Recorded Program Options screen appears with the option "Play [title of program]" selected.
4. Press SELECT. The recording begins playing. You can use the pause, rewind, fast-forward, or any other remote keys to navigate during playback.
5. When you press ■ (or when the recording finishes), the Playback Status screen appears. To exit from this screen and return to live TV, press LIVE, LIST, or press EXIT or ⓘ.



Note: If the Playback Status screen remains for 5 minutes, the DVR begins playing the recording to prevent screen burn-in.

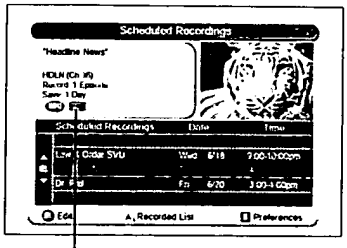
Watch a Recording That Is in Progress

1. Press LIST.
2. Press ▲ or ▼ to select the program that is currently being recorded.
3. Press SELECT **Options/Play**. The Currently Recording Program Options screen appears.
4. Press ▲ or ▼ to select one of the following options:
   - **Play from beginning**
   - **Play from current location**
   - **Stop recording and erase**
   - **Stop recording and save**
5. Press SELECT.



Display a List of Programs Scheduled To Record in the Future

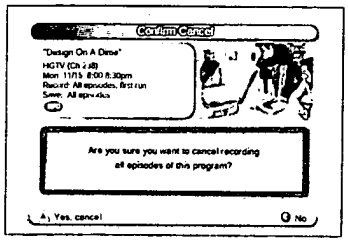
1. Press LIST.
2. Press A. The Scheduled Recordings screen appears with a list of all the programs you have scheduled to record along with programs that are currently being recorded.
   Note: Programs currently being recorded are highlighted in red.



If a program is currently being recorded, REC appears in the Information area of the screen.

Cancel Recordings

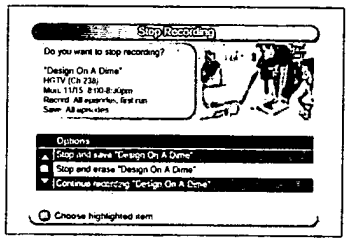
Cancel a Scheduled Recording



You can cancel a scheduled recording at any time.

1. Press LIST.
2. Press A to access the Scheduled Recordings screen.
3. Press ▲ or ▼ to select the recording you want to cancel.
4. Press SELECT. The Edit Scheduled Recording screen appears.
5. Press B. The Confirm Cancel screen appears and displays the question "Are you sure you want to cancel recording this program?"
6. Press A.

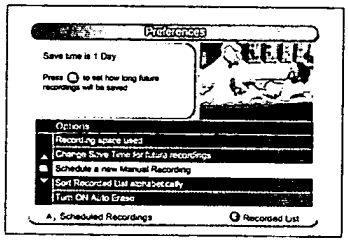
Cancel a Recording That Is in Progress



You can stop a recording in progress at any time. When you stop a recording, you can save what has been recorded or erase the entire recording.

1. If you are not watching the recording, tune to the channel that is being recorded.
2. Press ■ to display the Stop Recording screen.
3. Press ▲ or ▼ to select either the option "Stop and save" or the option "Stop and erase."
4. Press SELECT. The Record indicator on the DVR LED display turns off (unless another program is recording at the same time).

Schedule Manual Recordings

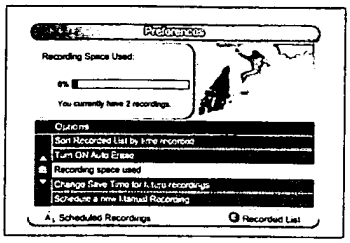


Manual recording is the action of setting up a recording through the Preferences screen by manually specifying the channel and the start and stop time, independent of the program guide. More than one program can be recorded manually at one time.

1. Press LIST to access the Recorded List screen.
2. Press B to access the Preferences screen.
3. Press ▲ or ▼ to select the "Schedule a New Manual Recording" option, and then press SELECT.
4. In the **Preferences** screen, set your channel, start and stop time, and save options, and then press A to save your changes.

Note: A manual recording is displayed as "Manual Recording" in the Recorded List screen.

Check Recording Space



The Recording Space Used feature shows both the percentage of space currently used and lists the number of recordings stored.

1. Press LIST.
2. Press B to display the **Preferences** screen. The Information area displays the Storage bar, which shows the percentage of recording space currently used. In the graphic shown at left, the Storage bar indicates that a small portion (6%) of the DVR storage space is being used.
   Note: If the Storage bar indicates that over 90% of the space is being used, consider some of the suggestions in the "Maximize Your DVR's Storage Space" section for more storage options.
3. Press EXIT to close the **Preferences** screen.

Maximize Your DVR's Storage Space

IMPORTANT! The DVR is intended to be a short-term storage device. Use the following guidelines to make the most efficient use of your DVR's storage space.

- Set your default Save Time setting to 14 days or less. Setting it to "Until I Erase" causes the storage space to fill up more quickly. (For details, see "Change the Default Save Time Setting for Future Recordings" on page 21.)
- After you watch a recording, decide to either erase it or keep it permanently by transferring it to a VCR tape. (For details, see "Erase a Recording" on page 22, or "Copy Recordings From Your DVR to a VCR Tape," on page 23.)
- Turn on the Auto Erase feature. This feature automatically erases the oldest recordings whenever additional space is needed to record a new program. However, this feature does not erase recordings that have a Save Time of "Until I Erase." These recordings remain until you decide to erase them. (For details, see "Automatically Erase Oldest Recordings," on page 22.)
- Connect your 8300 to an optional external Serial ATA (SATA) hard disk drive for expanded recording capability. (For details, see "Add Storage With a SATA Hard Disk Drive [Optional]" on page 24.) **Note:** SATA connectivity is only available on the 8300 DVRs.

How Many Hours of Programs Can I Store on My DVR?

Explorer Model	*Storage Capacity
8000	Up to 50 hours of digital non-HD programs (based on an 80 GB capacity hard drive)
8000HD	Up to 90 hours of digital non-HD programs Up to 20 hours of HD programs (based on a 160 GB capacity hard drive)
8240, 8300, 8300MR	Up to 50 hours of digital non-HD programs (based on an 80 GB capacity hard drive)
8240HD, 8300HD, 8300HDC, 8300HD MR	Up to 90 hours of digital non-HD programs Up to 20 hours of HD programs (based on a 160 GB capacity hard drive)

*The total program hours that can be stored depends upon the format and data rate of the programming source, as well as the DVR hard drive storage capacity.

Save Recordings

Whether you record a program you are watching live or schedule a program to be recorded in the future, you have three ways that you can select how long to save the recording:

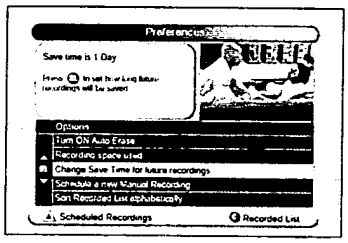
- **Use the default Save Time setting.** Using the default Save Time setting is the quickest way to save recordings because you don't need to select the save time each time you record a program. For details, see the "Change the Default Save Time Setting for All Future Recordings," next in this guide.
- **Select the Save Time when you schedule a new recording.**
- **Change the Save Time after recording a program.** For details, see "Change the Save Time of a Single Recording," later in this guide.

IMPORTANT! The DVR is not intended as a long-term storage device. When saving recordings, consider the impact of the save time on your storage space.

Change the Default Save Time Setting for All Future Recordings

When the DVR leaves the factory, its default Save Time is set to 14 days. Using this setting, the DVR automatically saves each recording for 14 days. At the end of 14 days, the DVR erases the recording to make space for other programs that you want to record. You can change this setting from 14 days to 1, 2, or 7 days, or to "Until I Erase."

IMPORTANT! When you change the default Save Time setting, it affects *all future recordings*, not the programs that were previously recorded.



1. Press LIST.
2. Press B to access the Preferences screen.
3. Press ▲ or ▼ to select "Change Save Time for future Recordings."
4. Press SELECT to access the "Save Time" options.
5. Press ▲ or ▼ to select your desired Save Time.
6. Press SELECT to save your time selection and return to the Preferences screen. The new default Save Time setting appears in the Information area of the Preferences screen.

Change the Save Time of a Single Recording

After recording a program, you can change how long the DVR saves the recording.

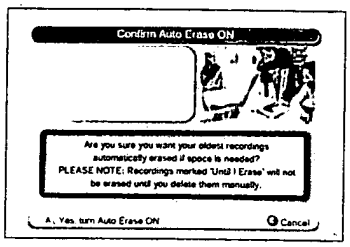
1. Press LIST.
2. Press ▲ or ▼ to select the recording whose Save Time you want to change.
3. Press SELECT. The Recorded Program Options screen appears.
4. Press ▲. The option "Change save time" is selected.
5. Press SELECT. The Change Save Time screen appears.
6. Press ▲ or ▼ to select the new Save Time.
7. Press SELECT. In the Information area of the screen, the message "One moment please" appears, and the new save time displays on the Recorded List screen.

Erase Recordings

Automatically Erase Oldest Recordings

To ensure that there is enough storage space for new recordings, turn on the Auto Erase feature. When Auto Erase is on, oldest recordings are automatically erased one by one until there is enough space to record your new programs.

Note: Recordings with save times of "Until I Erase" are not automatically erased.



1. Press LIST.
2. Press B to access the Preferences screen.
3. Press ◁▷ to select "Turn ON Auto Erase."
4. Press SELECT. The Confirm Auto Erase On screen appears and displays the question "Are you sure you want your oldest recordings automatically erased if space is needed?"
5. Press A. The option now shows "Turn OFF Auto Erase" and the Information area displays the current status of the Auto Erase feature.

IMPORTANT! If you have both the "Auto Erase ON" and the "Save Latest - All Episodes" options set, you will lose your oldest recording if you do not have the available recording space on your DVR. See **page 16** for information on setting the "Save Latest - All Episodes" option.

Erase a Single Recording

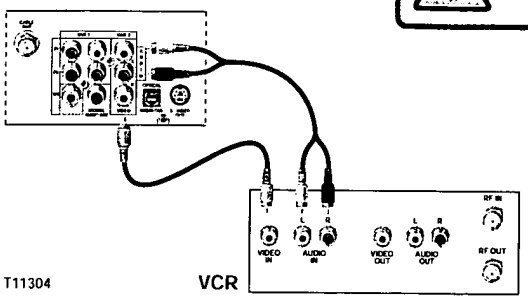
Erase a recording and permanently remove it from the DVR. Erasing programs that you no longer want to watch creates space to record and store other programs. If the DVR becomes full, some programs may be partially saved or not saved at all.

1. Press LIST.
2. Press ◁▷ or △▽ to select the recording you want to erase.
3. Press SELECT to access the Recorded Program Options screen.
4. Press △▽ to select "Erase."
5. Press SELECT. The Confirm Erase screen appears and displays the question "Are you sure you want to erase this recording?"
6. Press A. The message "One moment please" appears in the Information area of the screen, and the Recorded List screen displays with the program no longer showing in the list.

Copy Recordings from Your DVR to a VCR Tape

The Copy to VCR feature lets you copy recordings from your DVR to a VCR tape.

WARNING: Avoid electric shock. Unplug all electronic devices before connecting or disconnecting any device cables to the DVR.

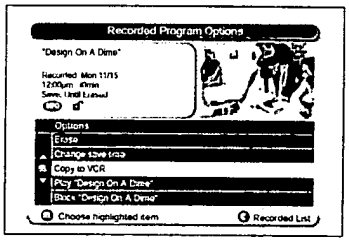


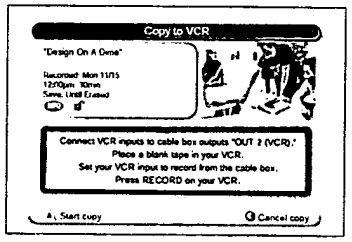
T11304 VCR

Notes:

- This graphic shows the 8300HD back panel layout. Other DVR back panel layouts will vary.
- It is possible to record live TV directly to a VCR tape (instead of copying your recording) by connecting the main OUT 1 outputs directly to the VCR inputs. However, when you do this, all remote activity (bringing up menus, pausing, rewinding, etc.) will also be recorded on the VCR tape.

Copy a Recording to a VCR Tape





1. Connect the VCR to the **OUT 2** connection on the back of the DVR.
   Note: Connecting to your VCR using the **OUT 2** outputs allows you to watch or record another program or even change channels in the Main screen, without affecting the copy in progress.
2. Make sure that a tape is in your VCR and that the VCR is set to record.
3. Press LIST.
4. Press ▲ or ▼ to select the recording you want to copy to the VCR. Make sure to select a program that is not currently being recorded.
5. Press SELECT to access the Recorded Program Options screen.
6. Press ▼ to select "Copy to VCR."
7. Press SELECT to access the Copy to VCR screen.
8. Make sure your VCR is properly connected to your DVR outputs, and press **Record** on your VCR.
9. Press A to begin copying to the VCR tape. The Recorded List displays the VCR symbol ▣ for the recording that is copying to VCR.
10. After the recording finishes copying to the VCR tape, playback the VCR tape in your VCR to verify that the recording was successfully copied.
    Note: Some DVR recordings, particularly pay-per-view events, cannot be archived to VCR tape, due to copy protection settings within the program content. If you copy a DVR recording to a VCR tape, *do not delete the DVR recording until you verify that you can successfully play the recording on the VCR tape.* You have to play the recording on the VCR tape to verify that the archiving process was successful.
11. If the DVR program was successfully recorded to VCR tape, you can delete the DVR recording.

Notes:

- You can watch the copying in progress through the PIP. You can turn the PIP feature on and off without affecting the copy in progress. A "Copying to VCR" banner displays for 3 seconds when you turn the PIP feature on.
- While copying is in progress, you are free to change channels in the main screen. You can even simultaneously record 2 live programs while you copy a recording to a VCR tape.

Add Storage with a SATA Hard Disk Drive (Optional)

On the 8300-series DVRs, you can use a Serial ATA (SATA) hard disk drive for increased recording capability. Contact your service provider for a list of approved hard drive models that you can use with the 8300s.

IMPORTANT! You cannot choose between recording to the internal DVR hard drive or recording to the SATA drive. If a SATA drive is connected to the DVR, a program is automatically recorded to the hard drive with the most available space. Recordings are not split across both the internal and external drives.

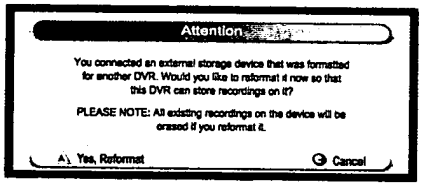
Note: Recordings stored on the SATA drive can only be played back on the DVR originally connected to the SATA drive. For instance, you cannot record programs to the SATA drive, remove the drive, and then connect the drive to a different DVR for playing back programs.

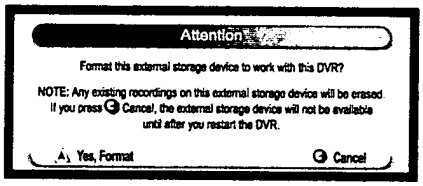
For instructions for connecting a SATA hard disk drive to the DVR, refer to the connectivity guide for your DVR model.

WARNING: Avoid electric shock. Unplug all electronic devices before connecting or disconnecting any device cables to the DVR.

Connecting the SATA Device to the DVR

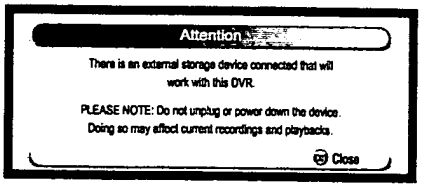
When a new SATA device is detected by the DVR unit, one of the following banners appears, indicating that you need to format the device to work with the DVR.

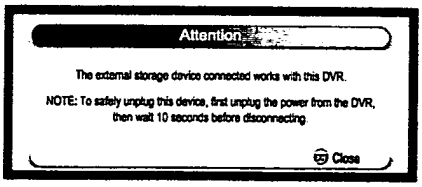




Follow the on-screen instructions to format the device.

Because your SATA drive was formatted to work with your DVR unit, should you need to disconnect, then reconnect the SATA hard disk drive to your DVR, one of the following banners appears, indicating that the external device was properly connected.





Press EXIT to close the banner.

IMPORTANT! Do not power down the SATA drive while the DVR is powered on. Doing so may result in lost or stopped recordings.

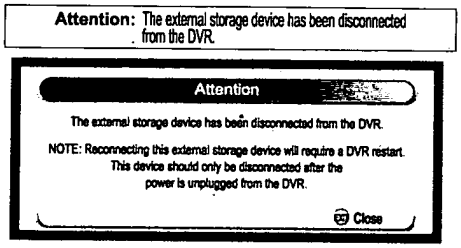
ADD STORAGE WITH A SATA HARD DISK DRIVE (OPTIONAL), CONTINUED

TROUBLESHOOTING THE SATA DRIVE

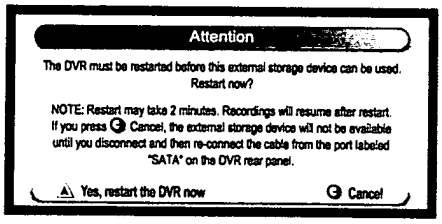
If you encounter problems when connecting or disconnecting your SATA hard disk drive, use the following warning banners to troubleshoot any drive issues.

WARNING: Avoid electric shock. Unplug all electronic devices before connecting or disconnecting any device cables to the DVR.

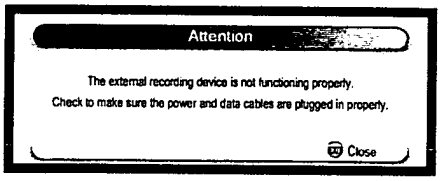
If the SATA drive is improperly disconnected, one of the following warning banners appears.



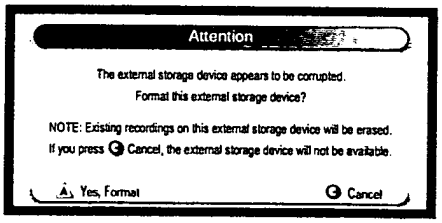
If you improperly disconnected the SATA drive from your DVR, then attempt to reconnect the drive to your DVR, a warning banner appears. Follow the on-screen instructions to restart the DVR.



If the power or data cables for the SATA drive are unplugged from the DVR, a warning banner appears. Check the DVR to make sure the power and data cables are properly plugged in.



If the DVR cannot read the SATA drive, a warning banner appears. Follow the on-screen instructions to format the SATA drive.



Maximize the Life of Your DVR

Turn Off Your DVR when Not In Use

To maximize the life of your DVR, you should turn **Off** the DVR when it is not in use.

When the DVR is powered **Off** (and plugged into an active outlet), all scheduled recordings are performed automatically – and your recordings are protected.

To turn off your DVR, simply press CBL and then POWER on your remote, or press **Power** on the front panel of the DVR. The Power light turns off; but, because the DVR is still plugged in to an active outlet, your scheduled recordings still occur.

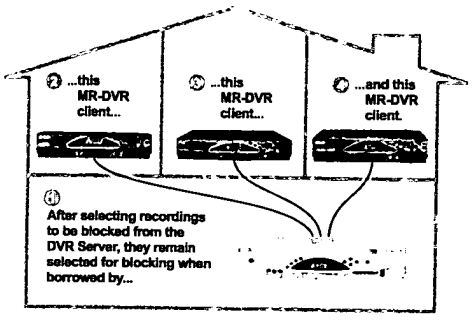
IMPORTANT! The Parental Control feature is automatically activated as a precaution when you turn your DVR back on. For more information about the Parental Control feature, see page 7.

Provide Adequate Ventilation

This product has openings for ventilation that protect it from overheating. To ensure the reliability of this product, do the following:

- Do not block or cover these openings.
- Do not place entertainment devices (such as VCRs or DVDs), lamps, books, vases with liquids, or other objects on top of this product.
- Do not place this product in any of the following locations:
  - On a bed, sofa, rug, or similar surface
  - Near heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat
  - In an enclosure, such as a bookcase or rack, unless the installation provides proper ventilation

THE DVR AND YOUR MULTI-ROOM DVR SYSTEM



With the Multi-Room DVR system, you can record your favorite programs on the 8300 DVR server, and then use your other non-DVR Scientific Atlanta digital set-tops (client set-tops) to play back and control recordings stored on the Multi-Room DVR server.

Notes:

- Multi-Room DVR service is subject to availability in your area. For more information, contact your service provider.
- The Multi-Room DVR feature is only available on the 8300 Multi-Room DVR models. As a future enhancement, the Explorer 3250HD™ client set-top will be able to play back HD recordings.
- Not all Scientific Atlanta digital set-tops can be used as clients. For more information, contact your service provider.

This section describes how you can set up your Multi-Room DVR system to restrict or block the viewing of certain programs and recordings to specific set-tops. *If you do not plan to block programming or recordings, you may skip this section.*

USING PARENTAL CONTROLS ON THE CLIENT SET-TOPS

If you block a recording on the Multi-Room DVR server, you must activate Parental Controls in each room to keep other client set-tops from watching that recording. Each set-top (server and client) has its own independent Parental Control setting. You must set it the way you want it to work in every room by following two steps.

1. Press SETTINGS to open Quick Settings.
2. Turn Parental Controls ON or OFF.
3. Block programming by channel, rating, or time within General Settings.

Some important points to remember about Parental Controls:

- For existing recordings on the Multi-Room DVR server, any recording (after it is recorded) can be manually blocked by choosing the **Block** option when selecting it from the Recorded List. Regardless of what blocking is set on the server, each client blocks content according to its own Parental Control settings. On each client, all ratings and channels blocked in General Settings will remain blocked until you turn Parental Controls off.
- For future scheduled recordings, any rating, channel, or time slot can be set for blocking within General Settings on the Multi-Room DVR server. These blocking settings do *not* automatically carry over to the client set-top even if the Parental Controls are activated on the client set-top. The client set-top must block the same future programming (by channel, rating, or time) within its General Settings so the blocking takes effect.
- Unblocking a recording on one client set-top will *not* unblock the same recording on other client set-tops or on the Multi-Room DVR server.

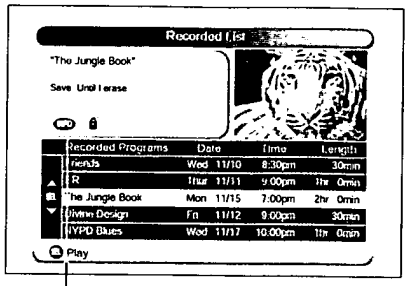
Use one of the following steps to quickly activate Parental Controls on either the Multi-Room DVR server or on the client set-top.

- Press the front panel **Power** button, or press CBL and then POWER on the remote to power off the set-top. The next time the client set-top is powered on, all the blocking you set up will take effect.
- Turn on the Parental Controls in the Quick Settings menu (see page 7).

SET UP PARENTAL CONTROL ON MULTI-ROOM DVR CLIENT SET-TOPS

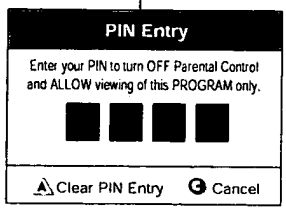
After you have decided how to restrict viewing for the set-tops in your home, set up a Parental Control PIN for each client set-top. All of the set-tops in your system need a Parental Control PIN to view blocked programs. If you do not plan to block programming or recordings, you do not need to set up a Parental Control PIN.

ON THE CLIENT SET-TOP:



The 🔒 symbol indicates that a recording is blocked and can be played only by entering a Parental Control PIN.

When selecting a recording that the Multi-Room DVR server has blocked, users must enter a Parental Control PIN.
Note: Turning off parental control here *does not* unblock this recording on other TVs.



SELECTING A PARENTAL CONTROL PIN

When selecting a number for the Parental Control PIN, keep the following in mind:

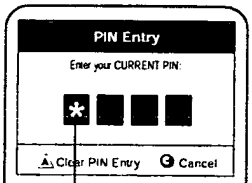
- The PIN must contain four digits.
- You may use a PIN that is unique to each Multi-Room DVR system set-top in your home, or you may use the same PIN for all Multi-Room DVR system set-tops.
- You may use a PIN that is the same or different from the pay-per-view PIN.

After you have selected a 4-digit number to use as a Parental Control PIN, set up the PIN by following the steps in "Setting or Changing the Parental Control PIN" below.

SETTING OR CHANGING THE PARENTAL CONTROL PIN

Each Multi-Room DVR server and client set-top leaves the factory with a Parental Control PIN of 0000. Follow these instructions to change the factory-set PIN to your own PIN or to change your own PIN at any time in the future.

1. While aiming the remote at the front of a set-top, press SETTINGS twice. The General Settings menu appears.
2. Press ▲ or ▼ to select **Block:PIN**.
3. Press SELECT. The options for Block: PIN appear.
4. Press ▲ or ▼ to select the option **Change**.
5. Press SELECT. A PIN Entry screen appears.
6. Enter the current PIN by performing one of the following tasks:
   - If you are changing the PIN for the first time, press the numeric keys to enter **0000** (the number of the factory-set PIN). The PIN Entry screen prompts you to enter your new PIN.
   - If you are changing your current PIN, press the numeric keys to enter your current PIN. The PIN Entry screen prompts you to enter a new PIN.
7. Press the numeric keys to enter your new PIN. The PIN Entry screen prompts you to re-enter your new PIN for confirmation.
8. Press the numeric keys to enter your new PIN again. The General Settings menu appears.
9. To close the General Settings menu, press EXIT.



When you enter a PIN in the **PIN Entry** screen, an asterisk appears each time you press a number key. Displaying an asterisk instead of the number itself keeps others from learning your PIN and lets you know that the set-top has accepted the number.

Note: For more information about turning the parental control feature on and off, see "Turning On and Off Parental Control" on page 7.

Frequently Asked Questions

Questions About the DVR

Q. What happens if the DVR temporarily loses power?

A. The recordings that were saved before the power loss are preserved. Future recording schedules are also preserved. You miss only the recordings that were scheduled to be made or the portion of the program that aired while the power was out.

Q. Where can I find details on installing the DVR?

A. Access Scientific Atlanta's Explorer eClub Web site at ***www.scientificatlanta.com/explorerclub****. It contains documentation on a number of topics, including installation and setup. You need the model number of the DVR and your email address to access the eClub Web site.*

Q. Why doesn't the DVR respond when I press the keys on the remote?

A. Consider the following suggestions when troubleshooting your remote:

- *Your remote may not be in the cable mode. To use any of the features provided by the DVR, the remote must be in cable mode.*
- *Verify that the batteries in your remote are positioned correctly. If the batteries are positioned correctly, you may need a new set of batteries.*
- *Verify that the IR Sensor on the DVR front panel is not blocked or covered.*

Q. I want to move the DVR to a new location. How do I do this?

A. After disconnecting the DVR from your TV and other components, reconnect it by following the instructions in your DVR installation guide. If you can't find your copy of this guide, log on to Scientific Atlanta's Explorer eClub Web site at ***www.scientificatlanta.com/explorerclub****. It contains documentation on a number of topics, including installation and set up. You need the model number of the DVR and your email address to access the eClub Web site.*

Questions About Controlling a Live Program or Recording

Q. Can I remove the DVR on-screen graphics and banners?

A. Yes. Some TV programs display "scrolling" information across the bottom of the TV screen (for example, news and sports "tickers"). The DVR on-screen status bar and other graphics may cover up information scrolling on-screen. Press EXIT *to remove any on-screen graphic or banner.*

Q. How far back can I rewind a program?

A. It depends upon whether the program is a live or a recorded program. You can rewind all recorded programs to the beginning of the recording. The situation is different for live programs. If you have watched a live program for less than 1 hour, you can rewind back to the point that you started watching the channel. If you have watched a live program for longer than 1 hour, you can rewind up to the last hour that you've watched. For details on how the DVR allows you to rewind, fast-forward, pause, or record live TV, see page 13.

Q. Can I pause, rewind, or fast-forward a program in the PIP screen?

A. No. Keys such as pause, rewind, and fast-forward control only the program shown in the main TV screen. They also control the small Quarter screen that appears on DVR screens like the Recorded List screen and the Program Guide.

QUESTIONS ABOUT PIP

Q. If a program is being recorded in the PIP screen and I turn off the PIP feature, will this stop the recording?

A. No. The DVR continues to record the program even if you turn off the PIP feature.

Q. What if my TV doesn't have the PIP feature?

A. That's no problem. You can still use the PIP feature because the DVR provides the PIP feature, not your TV.

QUESTIONS ABOUT RECORDING AND PLAYING BACK PROGRAMS

Q. If I've been tuned to a program since it started, do I have to rewind to the beginning to record the entire program?

A. No, if you have been tuned to the program since its beginning, and the program is one hour or less, just press REC from any point in the program to record the entire program. Recording automatically stops when the program ends.

Q. Can I record the program that is shown in the PIP screen?

A. You can record a program that is shown in the PIP screen, but you must swap the program to the main screen first. For details, see "Swap the Main Screen and the PIP Screen" on page 15.

Q. Can I record a pay-per-view event?

A. Yes, if you have been authorized by your service provider. After you purchase the event and wait for it to begin playing, you can record it just like any other live program. For details, see "Record a Pay-Per-View Event" on page 17.

Q. Can I schedule a recording of a future pay-per-view event?

A. Yes, if you have been authorized by your service provider. For details, see "Schedule Future Pay-Per-View Recordings" on page 17.

Q. Can I record video-on-demand (VOD) programs?

A. No.

Q. Can I recover a recording that was erased from the DVR?

*A. No. There is no way to recover a recording that has been erased from the **Recorded List** screen. You can copy programs to a VCR tape or extend the length of time a program is saved, though. For details, see "Copy Recordings From Your DVR to a VCR Tape" on page 23 or "Change the Save Time of a Single Recording" on page 21.*

Q. Can I use PIP while copying a program to my VCR?

A. When copying a program to a VCR, the PIP screen displays what is being copied to the VCR. You cannot use PIP to watch another program while copying a program to a VCR, but you can change channels in the main screen.

Q. Can I record two programs at the same time and watch a live program on another channel?

*A. No. If, while recording two programs, you try to tune to another channel, the DVR displays a **Channel Change Notice** to let you know that you must stop a recording to change channels. You can watch either of the two channels you are recording, or you can play back a recording and watch it. For details, see "Cancel a Recording That Is in Progress" on page 19.*

Frequently Asked Questions, Continued

Q. Can I erase part of a recording?

A. No. The DVR erases the entire recording.

Q. What happens if a sports event that I scheduled to record goes into overtime?

A. The DVR cannot determine whether a live program will end at its scheduled time. If there is a chance that the event you are recording may continue past its scheduled time, you can allow for this uncertainty by extending the stop time on the Confirm Recording screen.

Q. Do my Parental Controls in the Program Guide carry over to DVR recordings?

*A. Yes. If you block programs by channel or rating in the **General Settings** menu, recordings of these programs also are blocked. They will be recorded, but to play them back, you must enter your 4-digit PIN. For details, see "Watch Blocked Recordings" on page 9.*

Q. Do my Parental Controls on my multi-room DVR carry over to multi-room clients?

A. No. Regardless of what blocking is set on the server (multi-room DVR), each client blocks content according to its own Parental Control settings.

Q. A program I recorded on the DVR displays "Blocked Title" instead of the actual program title. Why?

A. The General Setting Block: Titles is set to hidden, and the program was blocked by Parental Controls. For details, see "Hiding and Viewing Blocked Program Titles" on page 7.

Q. At the end of the program playback, the DVR started playing the recording again from the beginning. Why?

A. To prevent screen burn in, the DVR prevents graphics and a still image from being displayed for too long. The Playback Status screen displays when a recording ends. If this screen is shown for 5 minutes, the DVR begins playing the recording again from the beginning.

Q. When the DVR is turned Off, will the programs that I have scheduled to record still be recorded?

*A. Yes. When the DVR is powered **Off** (but is still plugged into an active outlet), all scheduled recordings are performed automatically – and your recordings are protected. To turn off your DVR, simply press (OBL) and then (POWER) on your remote, or press **Power** on the front panel of the DVR. The Power light turns off; but, because the DVR is still plugged in to an active outlet, your scheduled recordings still occur.*

Q. I watched two 30-minute programs on the same channel, but when I pressed Record, the DVR recorded only the most recent program. Why didn't it record both programs since it buffered both programs?

A. It recorded the most recent program because it was the live program at the time that you pressed Record. The DVR does buffer all programs on a channel for up to one hour. However, when you are watching live programming, the DVR assumes that you want to record a specific program, not a specific channel. For that reason, the DVR records only the program that is currently being broadcast at the time that you press Record.

For example, let's say that you tune to a channel for 45 minutes and during that time watch a 30-minute "Friends" episode, and then you watch the first 15 minutes of "Seinfeld." You can rewind to the beginning of "Friends," but if you press Record, the DVR records only "Seinfeld." The DVR records only "Seinfeld" because "Seinfeld" is the live program at the time you pressed Record.

Q. Why did the DVR record only part of a program?

A. If the beginning of the program is missing, you may have tuned to the program and pressed REC after it began.

If the end of the program is missing, the DVR may have reached its storage capacity, the program may have continued past its scheduled time, or you may have manually stopped the recording.

If there is a chance that the program you are recording may continue past its scheduled time, you can allow for this uncertainty by extending the stop time on the Confirm Recording screen.

To determine why the entire program was not recorded, display the Recorded List screen and select the program in question. The Information area in the upper left of the Recorded List screen indicates one of the following reasons:

- *User stopped recording early.*
- *Reached storage capacity.*

If the DVR has reached its storage capacity, you must make space to record other programs. To make more space on the DVR:

1. *Erase recordings that you no longer want, or copy recordings you want to keep to a VCR tape and then erase them from the DVR. For details, see "Erase Recordings" on page 22 or "Copy Recordings From Your DVR to a VCR Tape" on page 23.*
2. *Turn Auto Erase On. Your oldest recordings are erased automatically if space is needed. For details, see "Automatically Erase Oldest Recordings" on page 22.*

Q. I tried to copy a DVR recording to a VCR tape, but nothing recorded. Why?

A. Some DVR recordings, particularly pay-per-view events, cannot be archived to VCR tape, due to copy protection settings within the program content.

If you copy a DVR recording to a VCR tape, do not delete the DVR recording until you verify that you can successfully playback the recording on the VCR tape. *You have to playback the recording on the VCR tape to verify that the archiving process was successful.*

QUESTIONS ABOUT THE MULTI-ROOM DVR CLIENT SET-TOP

Q. Can a Multi-Room DVR client set-top record a program?

A. No. Programs must be set up to record on the Multi-Room DVR server.

Q. Can I erase a recording on the Multi-Room DVR server if someone is currently watching it on one of the client set-tops?

A. Yes. However, a warning/confirmation message will be displayed on the TV connected to the Multi-Room DVR server stating that someone is watching the recording on another TV. The message will state "....are you sure you want to erase it?" If your answer is yes, press A to confirm that you do want to erase it.

Q. Why can't the Multi-Room DVR client set-top play recordings whose titles are gray in the Recorded List?

A. The recording may be a high-definition program or someone may have erased the recording on the Multi-Room DVR server. You can find out if the recording has been erased by closing the Recorded List and then displaying it again. If the recording is not listed when you display the Recorded List for the second time, then it has been erased. If the recording is still listed in gray, the recording was made from a high-definition program and can only be played back on the 8300HD Multi-Room DVR server set-top.

***Note:** As a future enhancement, the Explorer 3250HD client set-top will be able to playback HD recordings.*

QUESTIONS ABOUT HDTV PROGRAMS

Q. Are local TV stations broadcasting in HDTV?

A. Many local TV stations and other programmers are transmitting digital signals. However, transmitting a digital signal does not mean transmitting an HDTV signal. Most stations, however, once they begin broadcasting in digital are offering HD programs from their parent station, such as CBS, ABC, NBC, Fox, WB, UPN, or PBS.

Q. How can I find out which programs are broadcast in HD?

A. To find out which programs are broadcast in HD, log on to the Web site of your service provider. Many service providers list their channel lineups on their Web sites and indicate the channels that are broadcast in HD.

Q. Why are some HDTVs 4:3 Aspect Ratio and Others 16:9?

A. The aspect ratios differ because television manufacturers build both standard-screen and wide-screen HDTVs to appeal to consumer viewing preferences. The two aspect ratios are as follows:

- *On wide-screen (16:9) HDTVs, the programming is displayed on the full screen.*
- *On standard-screen (4:3) HDTVs, the programming is displayed in letterbox format in the middle of the screen. (There are bars surrounding the picture.)*

Q. What are the differences between standard TVs and HDTVs?

A.

- *HDTVs can be 1/3 wider than traditional TVs, although some HDTVs have a traditional (4:3 aspect ratio).*
- *HDTV uses a much finer resolution to create the TV picture—1125 lines for HDTV as compared to 525 lines used in standard TV (SDTV). This means that the resolution for HDTVs can be up to 1920 x 1080 pixels as compared with 720 x 480 for SDTVs.*
- *In the United States, HDTV is always broadcast with digital signals. SDTV is currently broadcast in both digital and analog. (However, HDTV and digital SDTV do not use the same digital signal.)*
- *Generally, all HDTV-ready monitors or integrated HDTV sets are capable of supporting an SDTV 480i or 480p signal. Not all HDTV monitors support both 720p and 1080i HDTV signals. For instance, some plasma displays support only 720p.*

Q. I have a wide-screen HDTV and am tuned to a channel that is listed as an HD channel, but the picture is not displayed in a wide-screen format. What's wrong?

A. The program may not be an HD program. Not all stations broadcast HD programs. Because non-HD programs do not use a wide format, the picture does not fill the width of the screen. To fill the space, the DVR automatically places bars on the sides of non-HD programs. You can change this display to one that removes the bars and fills the screen with the picture.

Q. I'm concerned about burn in. Can I remove the bars that display when watching certain programs on my HDTV?

A. Yes. You can remove the bars and enlarge or stretch the picture to fill the screen. If you have a standard-screen HDTV, you might try removing the bars by displaying the program in a different picture format.

Burn in or "ghosting" occurs when an image is displayed on a TV for an extended period of time. Through time, the image becomes permanently burned into the screen, leaving a faint image of it on the screen. Some kinds of HDTVs are more susceptible to burn in than others. For other ways to reduce burn in, refer to the user's guide that came with your HDTV.

Get More Information or Assistance

This guide is designed to help you become familiar with the tasks you use most often when controlling live programs or recordings, recording programs, playing recordings, and displaying the PIP. It does not provide comprehensive information about the DVR. For example, you won't find instructions on how to install the DVR in this guide.

If you haven't found the answer to a question you have, you can make use of the following resources.

Online Documentation or the Explorer eClub

If you have questions after looking through the "Find Answers to Frequently Asked Questions" section of this guide, check the Scientific Atlanta Web site at **www.scientificatlanta.com**. It contains online customer support on a number of topics, including installation and setup. You'll also find the latest information about the DVR there, including updates to frequently asked questions.

For additional information about your DVR, Scientific Atlanta invites you to join the Explorer eClub. This online club provides news and information about the DVR. Access the Explorer eClub on the Internet at the following Web address:

www.scientificatlanta.com/explorerclub

To join and access the Explorer eClub, you need to enter the model number of your DVR and your email address.

Customer Support

If you have questions after looking through the "Frequently Asked Questions" section of this guide and the Explorer eClub, contact your service provider.

Information to Provide When Calling for Assistance

To best answer your question, your service provider may ask you for the following information:

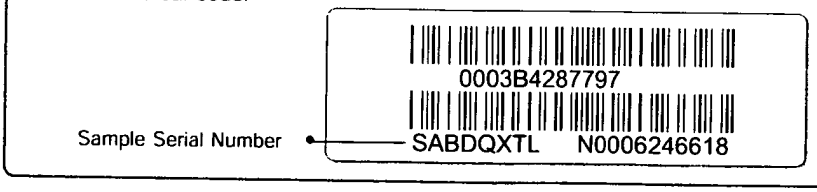
- **Product name and number:** To find the model name and number, look on the front of the DVR. The model name (Explorer) and model number (for example, 8300) are printed there.

  Write your model name and number here:_____

- **Serial number:** To find this number, look on the back of the DVR for a label that is similar to the example shown below.

Find the DVR Serial Number

To find the serial number, look on the back of the DVR for a label that is similar to the following example. The serial number begins with SA and is located in the lower left corner of the bar code.



⚠ CAUTION:

Avoid damage to the product!

Your DVR contains a sophisticated hard disk drive that is designed to record and stream digital video. You must not mishandle this DVR product. Handle this product with the same level of care you would use when handling other electronics containing a hard disk drive, such as computers.

Always wait at least 10 seconds after powering down the DVR for the hard drive heads to spin down (stop) before moving or handling the DVR.

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Quick Tips

Press to display the last channel you were last watching.

While in normal Play mode, press once while watching live TV or a recording to see the program in slow motion. Press a second time to resume normal play.

Press to remove any Explorer screens or banners and display full-screen TV.

Press to display the Information banner. This banner provides information about the channel you are watching. It can also help you confirm that you are recording a particular channel. When a channel is being recorded, the **Recording Now** REC symbol appears in the banner.

If watching a buffered program (delayed TV), press to catch up with the live TV broadcast.
If playing back a recording, press to return to the last live TV channel you were tuned to.

Press to replay the last 8 seconds of a live or recorded program. Each additional press jumps back 8 more seconds.

For HDTVs, press to remove the letterbox or pillarbox bars. Press once to stretch the display and remove the bars. Press a second time to enlarge (zoom) the display and remove bars. Press a third time to return the display to the normal setting (letterbox or pillarbox).

then Press **Pause** then **Fast Forward** to step through single frames going forward.

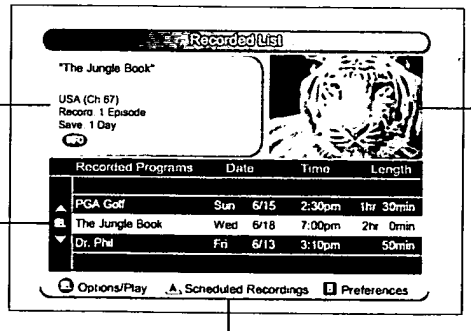
then Press **Pause** then **Rewind** to step through single frames in reverse.

Explorer Screens

This illustration explains the format of a typical Explorer screen, showing where to look for key information and how selections are presented. Although each screen contains information and options that are specific to a particular task, most of the screens are very similar to the example screen shown here.

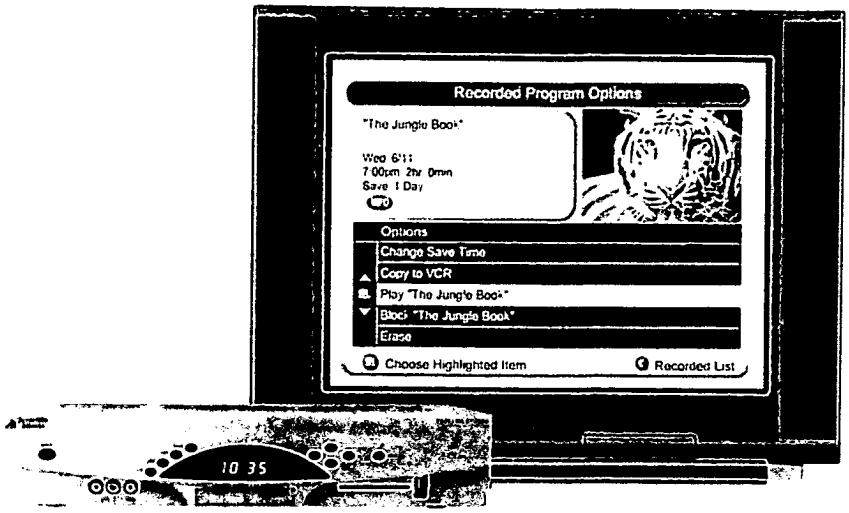
The **Information area** displays information about the program you have selected from this screen or about the program you are tuned to.

The **Selection area** displays items you can select. Here, for example, are recorded programs that you can select.



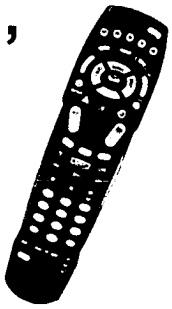
The **Quarter screen** shows the program of the channel you are currently tuned to or the recorded program you are watching.

The **bar** at the bottom of each screen displays selections that you can make from the screen.



With the Explorer DVR you can record your favorite programs and then play back your recordings whenever you want.

The built-in digital video recorder and Picture-in-Picture feature give you complete control, convenience, and choice when watching TV.



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Use this guide for the following Explorer models:
8000, 8000HD, 8240, 8240HD, 8300, 8300HD, 8300HDC, 8300 Multi-Room, 8300HD Multi-Room

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